The Builder.

VOL. XIV.—No. 688.

THE notices we have already given of the Barrack Competition Exhibition at Burlington House have brought us letters sufficient to fill the whole of our present number. To print them is manifestly impossible. We are, however, anxious to pay every attention to the points which have been laid before us; but shall have better opportunity for doing so after the interval of another week. We referred to the elaborate character of the drawings generally, and to the more than ordinary advantage offered through the opportunity of the study and comparison of so many different projects for the same work—one of great extent and comprehensiveness. The particulars and specifications sent with the several designs, since we wrote have been placed in the rooms, and afford us double ground for our opinion. For the success of the original object, and the interests of all concerned, the exhibition should be kept open as long as possible. Scarcely any department of professional practice is there, whence an individual may not receive some new light; and the remark will apply to the inferior class of the designs, as to what may be considered best. Whether the Government will need to go from England for a design for their proposed offices, "in order that we may at last have *some* building worthy of the metropolis," we will not at present consider; but we have abundant testimony now to what we have often asserted, that in the profession (taking it with all the demerits ascribed to the general body) there is no lack of skill, scientific knowledge, or artistic ability. What is needed in a pursuit like that of architecture, involving so many apparently opposite qualifications, is precisely that sort of interchange for which there is the opportunity in the present case—though we wish it could be afforded at less cost to individuals, as well as with less danger of injustice.

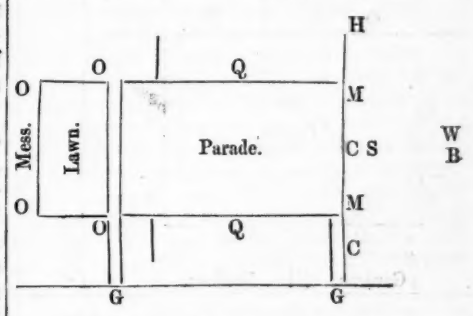
It is indeed *painful* to us to see the amount of labour which is incurred, from planning and calculating down to mounting and straining—and the positive money outlay—and to note the merit of many matters of detail, in cases where we detect an error in the very first conception of plan. And it is not always clear from the report what degree of latitude was permitted, or what attention was to be paid to any different impression deduced from the evidence. To the competitors who were concerned in the strictures of our correspondent last week, it is at present due to state this. Remarks that we make now can apply only to arrangements for a similar object in future. For, it seems to us that the plan of collecting evidence in cases of such a nature has many advantages. Any competitor, however, should feel free to digest evidence, so that he might give form to his own ideas, rather than to the conclusions of a committee. The whole evidence here was printed, and the existing barracks were thrown open; but, on the other hand, the leaving some *minor* points in express terms, to the discretion of architects, was liable to induce the inference that no discretion could be allowed generally. Thus, in the majority of cases, apprehension has been felt about departing from the terms of the report: in other cases the report has been even *blindly* followed; and there are few designs where the judgment has been allowed entire play. It is not absolutely necessary to detach the ablution-rooms and other adjuncts to great distances, and there might be ways of arranging kitchens other than what is known at the barracks at Birr.* The permission which some of the competitors conceived they had as to distinct day-rooms, and the provision of kitchens detached, has led to the arrangement of plans, where dinners would have to be carried some seventy or eighty feet,—"by a *covered* passage," indeed,—but otherwise through the open air. These errors would hardly have occurred where *architects* were free to act. Again, the views of certain authorities as to peculiar and incorrigible habits in the soldier, are very difficult for the civilian to reconcile with what he hears about discipline. In other cases, the requirement of the cricket-ground has hampered the designer. It would have been better to assume this as to be provided outside the walls,—as it surely must be in expensive sites, and might be in all; at least the comparison of the designs would have been facilitated by uniformity of views taken of the indispensable barrack-building area.

The design No. 7, with the motto "In Omnia Paratus," shown in an effective set of drawings, has the entrance in the centre of the side of the parade-ground, with the men's quarters along the opposite side, and the officers' rooms at each end. Behind the men's quarters are large recreation-courts, with the married quarters, schools, &c. at one end, and the hospital at the other, the stores being along the back. The decorative character of the design is given by the general use of arcades on the two stories, the materials being red brick and stone. The parade-ground is extended by lawns. There are large archways of entrance, and through the range of the men's quarters.

In No. 10, with the motto, "Victoria," in a wreath, by Messrs. J. T. Wood and R. Pope, the arrangement of the men's quarters, parade-ground, and entrance, is similar; but the officers' quarters are placed along the entrance side, with a space along that side intervening. The chapel-school is at one end of the parade, and a large covered drill-shed at the other. The various stores are at the back,—the married quarters being to the extreme left (looking at that part of the plan), and the hospital to the right. The plan of the men's quarters corresponds with what has been adopted in the majority of the designs. The range of building is in two stories; each company has separate stairs; and four rooms for twelve men each, and lighted from the ends, are on each floor. The rooms are back and front, with open courts between. The serjeants' rooms are adjacent, being in this case placed across a passage, an arrangement which the plan would allow to be modified. A dining-room, separate kitchen, ablution-rooms, and cleaning-rooms, are beyond open courts at the back, and are one story in height. There are broad ways through the line of quarters at two places. This design is of plain Italian character. A second design is carefully studied in the Gothic style. The hospital in the former case has open galleries on both floors, all round.

No. 11, "Nec Aspera Terrent," appears also to comprise more than one general design. The plan has the chapel at one end of the parade, and the hospital at the other; the officers' quarters, gate, married privates, washhouse, and prison, are along the front; and the men's quarters are at the opposite side of the parade, with the orderly-rooms in the centre. At the back are yards attached to the stores, canteen, amusement courts, and (what is to be found in other designs in the collection) a circular bath, on the principle of that suggested and lately illustrated in our pages. There is a large covered space for drill at one end of the ground, and a gymnasium near the hospital. The range of building forming the men's quarters is in three stories, and is thus arranged. A corridor, 16 feet wide, with skylight roof and ventilators, runs from end to end of the building, the full height. At the level of the several floors, openings being left in each, galleries are formed. Each company has two dining-rooms on the ground-floor,—the end of the room being parted off as a cooking-place. The ground-floor back is occupied by the barrack-master's stores, cleaning-rooms, &c. On each of the two floors above are four rooms, for twelve men each, with ablution-rooms and sergeants' rooms. There is some little defect in the position of some of the latter rooms as to inspection. The principal design, of good Italian character, is well treated; and two views of the parade-ground, in pencil, have the buildings outlined in masterly style.

No. 12, "Ne Jacto," looks as if it had come from the same drawing-board as design No. 80, upstairs; but it is on a much smaller area of ground, and makes no pretension whatever to decorative character. We counted thirty-four drawings, and all were most carefully executed—full tables of scantlings being added. If any importance is to be given to the principles which have been set forth in our pages, the design deserves some attention. The company's quarters are in detached blocks,—five on each side of the parade-ground. The latter is of the specified size,—250 by 100 yards,—but added to one end, before the officers' quarters, is a lawn. But we may as well adopt the convenient explanatory method used by our correspondent last week. The principal letters of reference are as those used by our correspondent; and the parts of the plan shown, of course, express general arrangements only.*



Q.	refers to	Quarters for the men.
M.	„	Married quarters.
O.	„	Officers'.
C S.	„	Chapel-school.
C.	„	Canteen
S.	„	Stores and other offices.
G.	„	Gates.
H.	„	Hospital.
W B.	„	Washhouse and baths.

The detached buildings, or men's quarters, are shown with four different arrangements for each. In all, the entrance is either at the side, or at the back; and this is, perhaps, a defect. Most of the walls are proposed to be built with cavities; and generally both the drawings and specification show that the construction has received great attention. In some of the plans the infant schools are placed at a distance from the principal school building,—though near to the married quarters. Here these several departments, with the library and the washhouse, are adjoining each other.

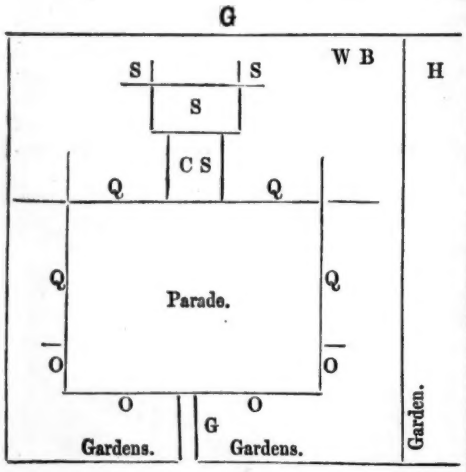
No. 15, "Sevastopol," has a plan wholly different to any of those preceding. Let the reader suppose a circle as the centre of a build-

* By an error of the press last week, in the reference to the plan, the word appended to O, was printed without the letter R. The reference should have read,—O. Officers. Our own statement as to the back-yards of Design 2 was correct. Our correspondent was in error in saying there were none. He did not include the rear blocks of building; and the numbers of the Companies seem to have been misplaced. Of course, the plans are given to explain general distribution only; and many buildings are omitted.

ing, inscribed in a square of somewhat larger diameter (if we may so apply the terms), and round the square a covered space 43 feet wide, with galleries of communication at the heights of different floors, along it. Suppose the covered space to be prolonged to form eight arms. The latter are appropriated to various purposes, dormitories included,—the sergeants' rooms being at the angles, or intersections. The central circular space forms a general kitchen; the space between that and the square is appropriated to washhouses and stores; and in the space of 43 feet are dining-tables. The whole forms the centre building of the barrack. Round it are grouped the hospital and the residences of the married soldiers, married officers, and unmarried officers; and a parade is provided in front of all.

In No. 16, "Pro Aris et Focis," though rectangular forms are adopted, the kitchens are similarly placed, or all together, in the centre, with a lofty smoke-flue; the barrack-rooms come next, and the other buildings are at each end.

In No. 17, "Con Amore," we have a plan much resembling No. 12,—though each one has its peculiar advantages. The author of the present design—Mr. Kerr,—though he exhibits few drawings, has shown by his written particulars and specification that he has gone very carefully into the subject. Taking the parade-ground as the basis of his design, he also groups the officers' and men's quarters round it; also placing the latter in detached blocks, so as to get isolation of the companies and the advantage of frequent through-passages. Otherwise, his plan differs from No. 12;—but we had better attempt the same means of explanation. It will



be seen that the chapel-school is in a central position, and in the same building also are the court-martial and orderly rooms (which in many of the other plans are joined with the guard-house at the entrance-gate), and the staff-sergeants' rooms. A goods' shed is placed immediately behind. The alleys between the companies' buildings are covered over, in conjunction with the verandahs which run round the parade. But the peculiarity of plan No. 17, or of that one of several arrangements of the men's quarters which its author seems to hold most in favour, is that the married people are all accommodated in the same block of buildings as the unmarried of the same company,—though of course with proper separation and distinct entrance. He is led to this view by the arguments which there are against placing any of the privates in a building detached from their companies,—arguments which were apparent in the evidence of Col. Wood and Lord Cardigan, and indeed of others. The wives of the company and pay-sergeants are unavoidably accommodated in the same building; and Mr. Kerr thinks that this rather strengthens the argument against removing the others. He, therefore, in one of his arrangements, has the six rooms for married privates, with the pay-sergeants' rooms, and spare rooms for staff-sergeants, on the ground-floor, with a small yard alongside the alley, from which is the entrance to this quarter; whilst the entrance for the unmarried (and, of course, unavoidably also for the company sergeants) is in the centre of the block, or directly from the parade. The latter entrance is by an arcade, through which access is gained to a covered yard, and through that to the two dining-kitchens, and attached cookeries, and round to the conveniences. The staircase ascends from the arcade; and also leading out of it are, on one side, an ablution-room, and on the other a cleaning-room. His other plans are based on the supposition that the recommendation as to married quarters in the report might after all be carried out,—and which quarters he would have then to provide somewhere else. The chief difficulty in the working of the first plan would arise from the distance that the married women would be from the spot where the author of the design has to place the general wash-house—which, in other plans, is appropriately attached to the married quarters. And he is hardly correct that the distance might be traversed without inconvenience. We do not lay much stress upon a slight gap in the covered way which he contemplates for the whole distance; but the position of the doorways to the yards would be objectionable: these, however, might be altered. The suggestion which we would venture to throw out, is, whether a small wash-house might not be combined with each company's buildings. Much may be done with the heat of a single kitchen fire,—as indeed is shown in the design, No. 7, mentioned in our last. The barrack-rooms in design 17, with the arrangement described, are provided on two upper floors. There are two rooms on each floor, or each room for one squad. The rooms have the windows and fire-places at the ends, and have a removable division running partly across, midway in the length. The entrance is from a wide corridor (which is at the top of the stairs, and gives access also to the serjeants' rooms) in the centre; and on the opposite side is a large window in a recess—where also are appropriately placed a closet and other convenience for night use. In his elaborate essay accompanying the design, Mr. Kerr sets forth the principle, that whilst buildings such as industrial schools, workhouses, asylums, and the like, require to be treated each as a household, a barrack is not at all of that character, but is rather a military *village*. The hospital, we should say, he has wholly apart, and occupying a strip of ground at one end of the general plan, and it is made accessible from the back-yard rather than from the parade-ground. Small apartments for female nurses are preferred to barrack-rooms and "orderlies." It seems to us that some credit is due to Mr. Kerr for the clear basis on which he has placed the subject. There are points in which his plan and No. 12, each have peculiar advantages; and both plans deserve the careful consideration of the committee. Both appear to be practicable with small outlay.

No. 18, "Pax in Bello," with the entrance at one end of the parade, and five companies on each side, has the barrack-rooms all on the ground-floor,—the dining-rooms being ranged at intervals along the fronts, and the kitchens some distance in the rear.

In No. 19, "Utilitas,"—a Gothic design,—the entrances are placed at the angles, at one end of the ground. The roadways leading from them into the parade-ground, twist about in their course,—but as a similar arrangement practically results from the position of the guard-house opposite the gate, in the third premiated design, we presume that military authorities entertain no objections. The kitchens in this plan are arranged in two stories. We are ourselves not aware of any valid objection to the similar arrangement so much commented upon in the first premiated design.

No. 20, with a horse-shoe and the motto "In Spe," in the general outline is an attempt at symbolism. The outline of the plan in the present case is a pentagon, with a projection from one angle for parade-ground. In the latter are the chapel, canteen, and guard-house, and the general area has the mess-house in the centre, with the officers' and men's quarters grouped about in detached buildings, joined by covered ways. "The projectors of this plan," we quote their very words, "submit that as most armies, being divided into fifties or hundreds, a pentagon or decagon are figures best adapted for a model barracks of infantry." We fear we could find other cases where the shadow has been grasped to the loss of the substance.

No. 21, bearing a penny postage-stamp, has the appearance of a careful set of drawings,—portions which are shown in perspective being designed in an effective version of the Italian style, and nicely drawn. The plan, however, has some radical errors. The entrance is at one end of the ground into a fore court, with covered way round; and opposite are the officers' quarters—the parade being beyond. To get from the court to the parade, unless the troops went under the verandah, and round by one of the ends of the officers' quarters, they would have to go through the central cortile, where the openings between the piers do not seem to exceed 6 feet.

The only note which we have made as to the design No. 22, marked with a device and the name "Hiram," is that the author advocates the glazing of the windows with polished plate glass. No. 25, "Dum Spiro Spero," errs by providing a parade-ground of as many feet as there are required yards; whilst No. 29 puts the company sergeants eight in the same room, instead of adjoining their respective squads. It is saddening to see the waste of the labour of months, from the omission of an hour's reading and thought.

No. 26, "Argonaut," has the barrack-rooms arranged in two principal buildings, each on cruciform plan, the chapel being intermediate.

In No. 30, "Comfort," the plan absorbs a large area, a cricket-ground being placed in advance of the officers' quarters, which are to the front end of the parade. The school is at the opposite end, with the hospital behind, and the men's quarters are at the sides. No guard-house is placed at the gate: and the omission of a ready access to the hospital, according to the arrangement of walls and openings shown, is an important one. Errors of plan continue to force themselves on our notice as we pass on. Even in No. 31, "Numero, Pondere, Mensura," Messrs. G. and H. S. Legg, after passing through the gate near one end you have the choice of the road which takes you round a long journey by the backs of the officers' quarters, and seems to end "nowhere;" or you may jostle through the thickly-set columns of the verandah, as the direct route. The main quadrangle does not seem to be intended for parade, but is laid out with lawns, the men's quarters looking towards it; the officers' quarters being at one end, and the school and stores at the other. Behind the latter is the actual parade: but we should fear that, presuming the troops to get formed within it, to find the man who could lead them from it, would be about as difficult as the great duke said it was to meet with generals who knew how to get a few thousand men well out of Hyde-park. The cricket-ground is advisedly made *accessory* to this plan. It may be our duty to specify defects,—even where works have otherwise high merit,—but judging from some of the designs in the present exhibition, it might be more difficult to make good plans when unrestricted to ground, than under the ordinary circumstances. The sudden possession of riches has turned the heads of some of our friends. Ground and money *à discrétion*, and a level stage:—never did such unlooked-for strokes of fortune (or of fate) concur to bewilder the British architect. Need we whisper to all who habitually blame this restriction, or that lack of advantages, that *limited* means are often those of which the best use is made,—that not all is gold that glitters, or—

"A certain truth which many buy too dear,"—

that true *economy*, as understood from the days of Vitruvius to 1856, is a quality in all good *art*, and irrespective of the money paid. It is simply a doing the most with the materials which there may be—whether called poor or costly,—and letting no opportunities be lost.

The design, No. 34, "Britannia," has the several buildings arranged on the plan, with particular attention to symmetry. The main entrance is, as in most cases, in the middle of one side of the parade, the men's quarters being along the opposite side of it,—the stores at one end, and the officers' quarters at the other. The usual appurtenances of the men's quarters are at the back, where also are the married men's quarters and the hospital, in

corresponding blocks of building. The infants' school is placed near to the married people, and thus detached from the principal school, which is near to the parade. The men's quarters are planned on a principle somewhat different to what is found in any of the other designs. Thus, a corridor, the full height of the building, runs along the centre, and is lighted from the top. This is used, on the ground level, as a dormitory, and is bounded by dormitories on each side, two floors in height; and outside there are day-rooms, in two stories. The cooking places must be 80 feet or more, distant from the day-rooms.

No. 35, "Competitor," Mr. H. H. Fulton, provides kitchens in the basement, but is chiefly remarkable for its fireproof construction, and for the attention which has been paid to the warming and ventilation. The latter is partly maintained through channels left in the boxed girders, and through the cavities of the hollow-brick arches. The fresh air is admitted at the upper part of the room, and the exhausting force is obtained by the heat of the kitchen flues, which are formed with iron withes.

No. 36, with the motto "Excelsior" in a trefoil, Mr. C. F. Hayward, has the parade towards the further side of the ground, with the officers' quarters at one end, and the hospital and chapel at the other; and has the prison, orderly-rooms, stores, washhouses, and canteen, and two entrances along the front, and the intermediate ground occupied by the men's quarters. These last form two rows of detached buildings (along with staff-sergeants' and married people's quarters), the longitudinal space between the rows being covered with a light iron roof. The company sergeant has two rooms, and is conveniently located for inspection at the angle formed by the meeting of two barrack-rooms. The decorative design externally is Italian in style; but the bossed and rusticated work has considerable novelty: and the whole possesses what modern architecture sometimes stands much in need of—to wit, *character*. The entrance-gateways, and all other portions display taste.

No. 45, by Joshua Constable, a clerk of works at one of the encampments in Ireland, provides as parades two similar spaces, one gravelled and the other with grass,—the latter serving also for a cricket-ground. Together, these may measure 1,400 feet by 600 to 700 feet. The buildings are widely detached: but the plan is chiefly remarkable, as compared with others, from its being designed with a view to defence,—all the faces of the walls being disposed so that they might receive a raking fire from other parts.

We have still many designs in this large collection unnamed. We must, however, hope on another occasion, to speak of some of the most deserving. Where there is so much, it is difficult to gather a moderate proportion of the features of the several productions, or to deduce at once all the results of the reflections upon the subject of barrack accommodation which are embodied in the designs, or of which the present exhibition has been the occasion.

But pending the settlement of what principle of arrangement should be acted upon in building,—let us set down a few points which have impressed themselves upon us.

To learn the exercise of a soldier, space is required, and this should be inclosed from the public gaze. Men must be lodged and fed, and means of privacy, decency, comfort, and health should be secured. So long as we must have men to bear arms, we ought to see to it, for our own sakes, that they are not morally vitiated. Now, men cannot eat, drink, undress, and sleep in common without contamination. One black sheep, &c.—a little leaven, &c. Barrack-rooms at present are vitiating to the last degree, as one foul-mouthed fellow can taint the hearing of a hundred or more men, day or night. There is no escape. All over the country there is a movement in favour of improved dwellings for labourers, the great improvement being isolation in the dormitaries. Prisoners have their separate cells: why should soldiers be compelled to herd day and night in one room? There is no more degrading practice than that of sending men in crowds to obey the calls of nature; but to compel them also to traverse long distances is physically most injurious, as it induces neglect. Any medical man will say how injurious to health this is. One of the greatest comforts of British civilization is a clean water-closet, close to ordinary living-rooms. Now, if the poorest person in any community can have this convenience, there is no reason why it should be denied to the soldier. Then as to barrack sewers and drains. All sewers and drains should be external, that is, they must not be beneath nor within the main walls of the living-rooms, nor cross under floors. Many barracks, asylums, union workhouses, and large schools, are situate over sewers, drains, and cesspools: the consequences are, a vitiated atmosphere at all times, and disease in excess. If full examination of all barracks in which British troops are quartered were ordered, and a truthful report drawn up, the world would be startled at the horrible revelations made. There are barracks in which the soldiers are never healthy, and hospitals in which the sick never get well. The Mayor of Portsmouth said once, in open court, at an inquiry in Portsmouth, that he had that day declined an invitation to dinner from one of the dockyard officials, as he never went without being made unwell by the barrack smell. The Town Clerk said, "I know where you mean, and have also, on more than one occasion, declined invitations for the same reason."

There are barracks in the colonies so fatal that officers make their wills, and men give up hope of life, when they are ordered to the stations, where places have been built by contract, the contractors finding site and building,—the site being a swamp—because the land was cheap.

An examination of the Continental barrack accommodation would show Great Britain and France to be behind all other nations;—the Turk and Russian ranking first: the barracks of these two nations are extensive in plan, grand in design, and most convenient in arrangement. The buildings generally form hollow squares, and are two or more stories in height. The great barrack at Scutari, which the British now use as an hospital, is three and four stories high. There is a corridor running all round on the inside, glazed: rooms open out of this corridor: the privies are at the inner angles. In the centre is an elevated water-tank, with fountains. Each side of this square is some 2,000 feet long. The corridor is about 18 feet wide, and each story about 15 feet in height. The barracks at Kulali are on the same plan, but here there is no corridor, but a central open space from floor to roof, with side galleries; no separate rooms. Most of the large barracks in Turkey are modern, and were built by the late Sultan. German architects were, we believe, employed. We have reason to know that should Government ask for a report from the Sanitary Commissioners lately in the Crimea, plans would be given, as also plans and details of huts, tents, &c. Why, then, is it not asked for? The French overcrowd most sadly, and neglect all sanitary arrangements: water is used sparingly, and ventilation is not thought of. The result is well known.

REVOLUTIONARY ARCHITECTURAL PRINCIPLES.*

IT is some relief, whilst continuing our colloquy with Pre-Raffaellitism, to escape, though but for a moment, a direct personal conflict. I said that the "leading journal" had begun to swell the chorus: here is the passage referred to; it relates immediately to Regent and Oxford streets:—

"But a worse fault is the *falsehood* of all the decoration. It is all paint and plaster: below are good bricks. . . . . Compare the fronts of these houses with the backs: *the front is all smiles and hypocrisy—the back tells the ugly truth that the greatness is got up for show.*"—*Times* for Dec. 26, 1855.

There is no mistaking the relationship, though there may be the authorship, of this passage; nor can I hesitate to join issue with the principle it proceeds on.

Let me free myself, however, from misapprehension. That consistency is an architectural virtue, and that there is a positive beauty in intrinsicalness, is not disputed. Whether the streets, therefore, here referred to are, in these respects, in good taste, is not my question. It may be simply preposterous to build rows of shops like rows of palaces; or it may be that such building is but an exhibition of our national character—a telling all whom it concerns that we have brought society to a state of fusion; that we make a glory of our trade and commerce; that we profess to be the "nation of shopkeepers" our neighbours call us. On these matters I make no assertion: still less shall I attempt to extenuate such enormities as ponderous columns reared on panes of glass. I address myself exclusively to the principle of the passage.

Now every one knows that truth and falsehood are not in verbal expressions, but in what is intended to be understood by them. Micaiah said to Ahab, "*Go and prosper;*" yet Ahab was not deceived, nor was Micaiah a lying prophet. Is there deception in the case before us? Did the builder employ brick, and charge for stone? Does the spectator believe in stone?—was it meant that he should do so when he looks on brick? If neither, where is the falsehood? Let us take care we are not ourselves calling things by their wrong names. "*He that excuseth the wicked, and he that condemneth the just, they both are an abomination to the Lord.*"

But let us go a little further. Irrespective of deceptive falsehood, is there immorality of any kind in concealing "the ugly truth?" in covering the inferior with a more agreeable or becoming material? If so, then, how did Solomon overlay with gold "*the altar which was of cedar,*" and "*the cherubim,*" which were of "*olive-tree;*" and even "*the floor,*" which was, as we should say, *of deal?* And why did Bezaliel, "filled with the spirit of God," overlay "*the ark of shittim wood*" and "*the boards*" with gold?—(Exodus xxxvii. and xxxviii.)

There is a further word about "*front and back.*" Is this also a criminal question? Is there to be no longer distinction between "*comely and uncomely parts?*" It needs no words to show how much of the interest of architecture is in the answer,—how things would infallibly range themselves under the alternative of either making the back like the front, or else the front like the back. But what a requirement! How would either of the inmates of those houses be astonished were he denied the liberty of distinguishing between the every-day "parlour" and the more sumptuous "drawing-room;" or his blushing partner, challenged, on her way to an evening party, with having, beneath that specious velvet, some such ugly fact as a flannel petticoat?

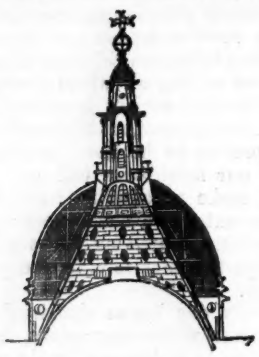
I am not trifling with serious questions. Go again to that stateliest fabric before referred to, "*Your bodies are the temples of the Holy Ghost.*" By what economy are their vital processes concealed even from our own observance? Shall we call that fair skin a deceitful mask? With permission of the courteous "Westminster," *I* want to secure for "manliness, veracity, and morality," things that may be in no small danger of "dilettantism and conventionalism."

And I am not quite sure that it is art alone that is in jeopardy. I will not go into homilies: we have proof enough in human experience that scrupulosity may damage conscience, as superstition may destroy true godliness. Sanctimoniousness, sentimentality, "voluntary humility," asceticism, and fantastic morals have been ever so many loop-holes for religious feeling. There is something more than accidental connection between the straining at the "gnat," and the swallowing "the camel."

We have, in sooth, battles enough to fight without taking every ant-hill for an "earthwork," or invoking thunderbolts on moles and cobwebs. Still less need we call on architecture to assume the name of "Christian," and then turn false witness against its neighbour. Poor Pugin allowed himself a seeming triumph I hope he lived to repent of. There is an exhibition of the dome of St. Paul's that disgraces his book "On the True Principles of Christian Architecture," of which I trace the influence in the article before us; and which, as a sample of other things, it is high time to strip of authority it is not entitled to. That there may be no mis-

* See p. 171, *ante*.

conception, I give, as in a former case, ocular demonstration. Here is Pugin's section:—

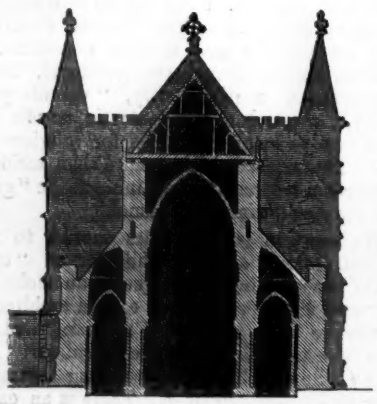


The case is very simple: the external dome is not the only one; nor the one that supports the lantern. It were almost enough to add,—Who ever said it was? Yet this is to be written down a case of meretricious, false construction,—"a fictitious dome,—*not the dome of the cathedral, but a mere construction for effect,—a mere imposing show, constructed at vast expense, without any legitimate reason.*"—P. 9.

Now, it may be slowness of apprehension; it is not, I trust, querulousness, much less moral obliquity, if I venture to express serious doubts as to the grounds of this judicial verdict. On what principles is the giving to a metropolitan church an amount of external dignity beyond internal requirements, to be put without the pale of all legitimate reasons? And how long have Englishmen been,—or when and why should they begin to be,—ashamed, that the most conspicuous, magnificent, and attractive object that (hitherto, at least) has met the eye and given notice of their metropolis, should be that unrivalled dome which connects the name of London with that of the Apostle of us Gentiles? and how long has architecture been under vow of turning ascetic and abjuring "effect?" I might ask, who but a Puritan, a Papist, or an architectural fanatic, can look up at that glorious dome, lifting above the smoke and din of our monstrous capital the golden emblem of man's salvation, and pronounce the words, "fictitious,"—"mere imposing show," and "without a legitimate reason"?

Let us take bigotry in its own trap. If this dome is fictitious, and not the dome of the cathedral, because there is another dome seen, *though not exclusively*, from within, the crime must, of course, be incomparably more flagrant in all the thousand mediæval spires for whose "Christian" imitation we are to abjure these "pagan" domes. That magnificent lantern of St. Paul's does actually glorify the interior dome. What will be said of gigantic pyramids raised, "at vast expense," on lofty towers for no such purpose,—constructions so far from being the spires of their respective churches, that they are inaccessible, internally, to the scrutiny of a solitary jack-daw?

But our answer is not complete. Here is another section faithfully reduced, from Britton's "Salisbury."



I wonder who ever thought, before the days of Pugin and Pre-Raffaellitism, of charging Gothic architecture with double dealing, because it gave to Salisbury a double roof? and who would have expected to find Pugin's charge adopted ("Seven Lamps," note 8), by one who, treating of "Christian architecture," complacently calls the inner roof the "roof proper," and the outer one "the roof mask?"*

But here is something else. Our leading article speaks of "front and back"—fronts "*for show*," *open to ugly betrayal behind.* Well; but look again at the Salisbury section, and you will find there also some "truth," we must call "ugly" on the same principle. The different tints distinguish between the front as it would present itself on the stranger's approach, and the actual building that front professed to represent. I leave the reader to say how much of *this* "greatness is got up for show."

For myself, I can affirm that though Salisbury front may be defective as compared with others,—wanting in majesty, grace, or the impress of a pervading thought,—it is a fair front notwithstanding; and, what is to our point, a virtuous front, for it is really and truly a *frontispiece:* it does not content itself with a mere utilitarian terminating of the premises; but presents, not very skilfully perhaps, a surface of otherwise "useless wall," to intone what I trust may never be deemed a useless "cadence."

The pure legitimacy of all this I will not stop to argue further. It is unnecessary, of course, to multiply such cases; it is enough that these two pair off together. Let us have no more sweeping questions of "Christian and Pagan" turning, on palpable violations of common justice and common sense.

I cannot, however, leave the leading article without a word of further notice. There is something about *columns*, "regiments of pillars," "uselessness of Corinthian columns stuck on fronts," and "a tendency to profuse expenditure resulting in abominable ostentation," on which, though very far from denying all the premises or all the conclusions, or dissenting from much that is, to my apprehension, sound and valuable in the article, I must yet offer a remark or two. It brings us, in fact, face to face with a true counting-house maxim we are now systematically threatened with. I mean that all use of columns, save for what, on the very straightest principles, are for actual use, is wasteful, vicious, illegitimate, and inadmissible. I remember an encomium on a certain work of Sir Charles Barry, that it presented a *palatian* front without the employment of a single column.

Now, I hesitate not to call this a revolutionary and destructive principle, subversive of everything that makes architecture a fine art, and no less at variance with those great beneficent laws on which the Almighty architect has built the universe.

I will not stop to utilitarianize the column itself. It is true that it can scarcely ever be utterly useless. At the lowest calculation, it is a virtual buttress, and adds stability: perhaps our modern walls are not too strong. All this, however, I disdain to argue. Once admit the dictatorship of utilitarianism, and you have got to engineering, carpentering, bricklaying: you have done with art. There is, I know, the implicit common phrase of "*useful and ornamental.*" To that phrase, in its common usage, I, for one, cannot consent to subscribe. Between what is simply necessary to human existence, and what is but desirable for its accommodation, there is, of course, an absolute, essential distinction. Between things that, short of being thus necessary, are thus desirable, there are, of course, distinctions also, but of degree only, and not essential and absolute. If the word "*useful*" stand for anything short of what is necessary, then its distinction from "the ornamental" is therefore but one of degree only. The absolute contrast between the two is, I take it, a false contrast, like the contrast, no less common, between "sacred and profane history." All history, not fabulous, is the record of actions within the economy of God's moral government: what part of that record can be surrendered as profane? So "useful" means, I suppose, conducive to a proper end and purpose: if then, comeliness, befittingness, accordance with the great instinctive sympathies God has made us of—accordance with the great master-outlines and indelible emblazonry of his own workmanship, be, as I suppose they are, conducive to a proper end and purpose (and this is what I mean by ornament — all besides or beyond it is but disfigurement), where can you draw an absolute line between the useful and the ornamental? Who will say that ugliness is not an inconvenience? Or what would be thought of him who reading, "*Truly the light is good, and a pleasant thing it is to behold the sun,*" should straight say, "*Amen;* for light and heat give us corn and cabbage?"

I dare not trust myself on this topic, I have such a sense of the impiety and barbarity, as well as beggarliness of utilitarianism, as might tempt a volume rather than a parenthesis. Let me add one word of caution against "sophists, economists, and calculators." *Look well before you, ere you admit general principles.* "No columns save for actual use:" carry out the rule, and put down the consequence. Not a Norman tower or wall can, of course, abide it; nor an Early English arcade; nor anything Byzantine or Romanesque; nor, I had almost said, a single façade of all that architecture we shall ask leave of no man living to call Classical, and rejoice in. But this is nothing. If no pillars, then no pilasters; if none to support a needless cornice, then none to stand dummy beside a window; if no pilasters to windows, then none, of course, of those purely gratuitous pediments above them. What will you make of your façade? or of your principle? Take, if you please, the park front of Barry's, just referred to; there is not a single member that gives grace, or anything else that makes it palatian, which is not, in all other respects, as pure a gratuity as the columns you have repudiated. Let us understand where we are, and what we are doing. If "principles" are to be anything better than nine-pins, let us know with some distinctness what all these things are to come to—whether architecture is to continue its place and standing as a fine art—whether Apollo himself is to be put on this "prisoner's fare" of bread and water; to be brought forward from time to time, as before a set of hungry shareholders, with a sort of balance-sheet, from which all that does not go to swell the dividend is to be struck out and disallowed. If not, it is high time for the "*principiis obsta.*"

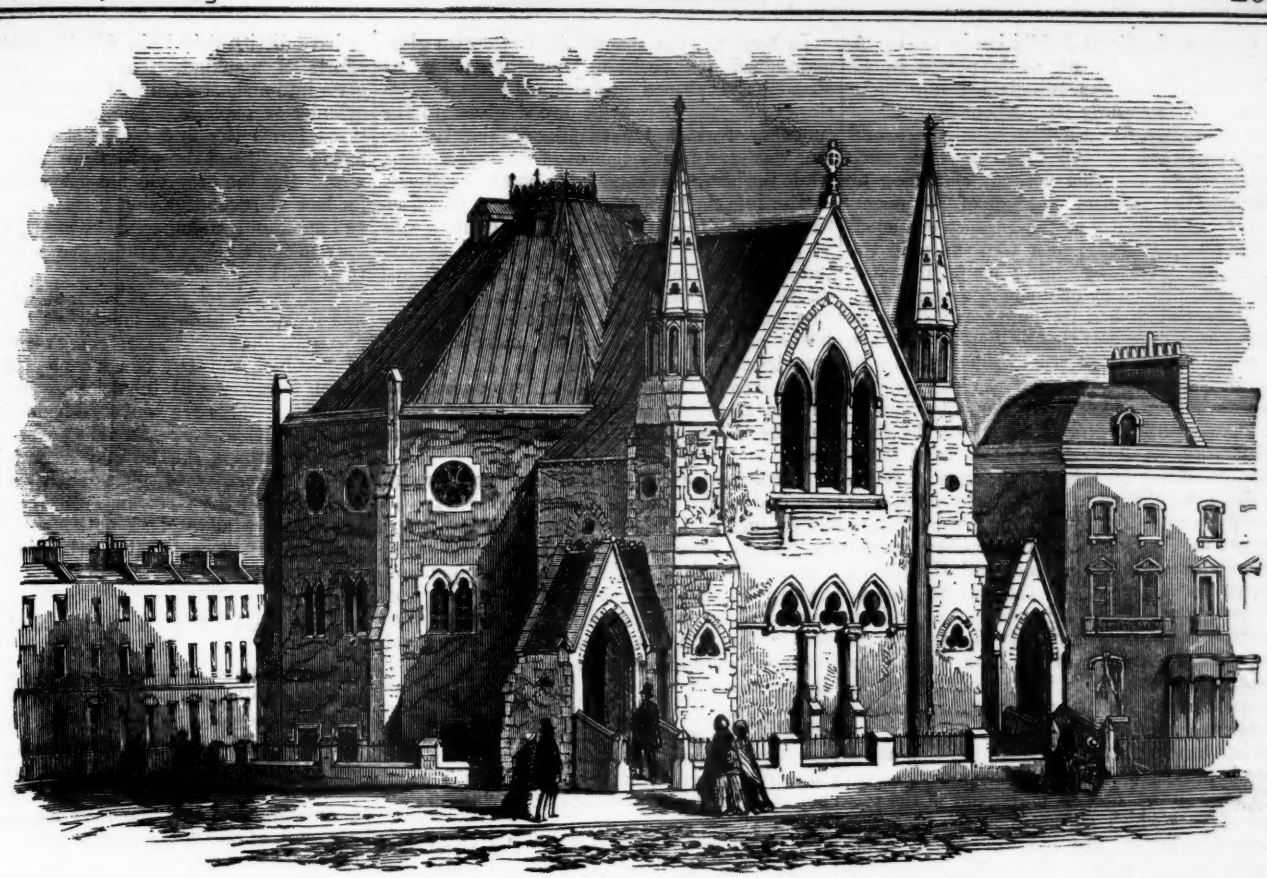
LENY.

* Stones of Venice, vol. i. chap. xiii.; vol. ii. chap. vi.

GOVERNMENT CONTRACTS.

OUR attention is drawn to this subject by the publication of a tract, printed by Levey, Robson, and Franklyn, of Fetter-lane, London, titled "Considerations on the New System of Government Contracts," in which the author, "a Septuagenarian who carried 'Brown Bess' fifty-three years ago, and who has also had his share of mercantile experience and of contracts, with both our own and the French Governments," adduces strong reasons why the present demoralizing system of Government contracts should be put an end to. Nor does he show much favour to the system of monopoly and centralization, by means of which the cheap contract system is likely to be superseded by Government manufactories, in which "Peter Dicks" of office under a new form may idle away their earlier years, and pension off their later.

To craving for cheap things the public is indebted for that learned and ingenious science of sham which is now being exposed by our analytical chemists, and our microscopic examinators. To it also is the Government indebted for mortars that would need no shells were they only explodible amongst the enemy, and not amongst ourselves; for spades that crumple up, and picks that fly off at a tangent; for clothing full of "shoddy," and for preserved meat-tins full of something worse. The Government ought to abolish the cheap contract system as soon as possible, and, by offering a fair and moderate price for a good article, set an example of respect for integrity in manufacturing and mercantile transactions. It is well known that men who respect their own character and the reputation of their manufactures actually stand aloof from Government contracts. This is an ominous and most serious aspect of affairs. We talk of the corruption of Russian officials, and the worthlessness of Russian Government supplies: let us



NEW INDEPENDENT CHAPEL, OFFORD-ROAD, ISLINGTON.——MESSRS. LANDER AND BEDELLS, ARCHITECTS.

look to our own short-comings. The repentance of the Government, should they turn over a new leaf, and adopt the best means of procuring first-rate supplies, and, at the same time, of cultivating the *conscience* of those they deal with, may be the turning point of national repentance, and the means of rapidly putting an end to the science of sham; for thus the public will very soon be induced to open *their* eyes to the only way of obtaining genuine articles of consumption, namely, by ceasing to run after cheap bargains, and by permanently and for ever associating the "cheap" with the "nasty." But so long as the Government set the example they do in ferretting out the cheap, and hence in obtaining its natural correlative, not only will the nation be likely to persist in the same absurd course, but the character and status of our national manufactures will continue to fall deeper and deeper into the mire of universal disrepute, till at length the commercial and manufacturing greatness of Britain will be a thing of the past, and her name but a byeword of reproach.

As to timber and deals, the author of the pamphlet writes,—"On these I will say but little: the general respectability of the trade is undoubted. Still, no one who has visited Aldershott and Shorncliffe, or seen the frames, &c. of huts sent to the Crimea or Heligoland, can doubt but that, in some way or other, Norwegian and Canadian spruce of indifferent quality have found their way there instead of 'Onega.'

That Government should have advertised for the Onega deals of Russia when war had stopped their import, or that they should have overlooked altogether the much lower-priced and much superior article for hutting,—the *yellow pine* of Canada, is surprising. It is well known that their attention was called to these matters; but 'Gallio cared for none of these things,' nor did they hesitate to allow a Member of Parliament to become contractor!

It is a fact that, for exposed buildings, the yellow pine of Canada is superior to all others. It resists the warping by sun, as it resists leaking by rain: it is much more free from knot-holes, much lighter for transport, and easier to work. Of these qualities the Americans take advantage, in using it for the beautiful and water-tight decks of their splendid passenger-ships." The pamphlet is calculated to do good.

NEW INDEPENDENT CHAPEL, ISLINGTON.

THE above chapel, designed by Messrs. Lander and Bedells, of Chancery-lane, is about to be erected in the Offord-road, Islington, by that portion of the congregation who seceded from the Rev. E. Davies's Chapel, in the Caledonian-road, and who have since that time assembled in Twyford-Hall, Caledonian-road. It is in the Gothic style, in the form of an octagon, and is to be built of brick, with stone dressings. It is calculated to seat about 800 adults and 200 children. There will be vestries, class-rooms, and other conveniences underneath, together with a spacious school-room, capable of accommodating at least 500 children. The cost of the whole, including lighting, warming, and ventilation, will be about 3,000*l*. We are asked to say that subscriptions will be thankfully received by Mr. G. Cuthbertson, of Wharf-road, King's-cross, for the committee appointed for carrying out the erection of the proposed building.

ON THE MANUFACTURE OF CROWN AND SHEET GLASS.*

To return to our flattened sheets. The sheets, when annealed, are drawn from the kiln and carried to the warehouse, where they undergo examination.

Sheet glass, blown by a less complex process than crown, is liable in the glass-house to a less number of defects, but the after process of flattening often makes up the deficiency; and the manner in which a sheet, spared by one process, is disfigured by another, is sometimes curiously provoking. Standing before the table of the "assorter," your eye lights upon a piece which, blown under an evil star, has imbibed in the glass-house every possible defect. The founder, skimmer, gatherer, and blower, have all stamped their brand upon it. It is seedy,—the vesicles, which were in the crown tables rounded by the rotary motion of the piece, here elongated by the extension of the cylinder: it is stony,—disfigured with stony droppings from the furnace; stringy,—thin threads of glass meandering over its surface; "ambitty,"—covered with stony speckles, symptoms of incipient devitrification; conspicuous with gatherers' blisters and blisters from the pipe,—badly gathered; badly blown,—thin here, thick there, and grooved with a row of scratches; and on this abortion the flattener chances to have exerted his most exquisite skill: it has passed through his hands unscathed, flat as a polished mirror, yet, from its previous defects, entirely worthless. Next comes before you a piece whose beginning was miraculous,—no seed, no blisters: it prospered under the hands of the gatherer and blower, and left the glass-house a perfect cylinder. But the croppie of the flattener marked it; the fire scalded it; dust fell upon the lagre, and dirtied it; scraps from the edges of the preceding cylinder stayed upon the lagre, and stuck to it; the stone scratched it; and the heat of the annealing chamber bent it. Such are the difficulties to which every cylinder is subject—those of the glass-house, and those of the flattening-kiln. Not all, however, are such as these: there are good as well as bad, but the good are generally in the minority.

The qualities range thus—best, seconds, thirds, fourths, and H, the latter standing for horticultural, and including all coarse glass, such as may be applied to horticultural purposes. The difficulty of escape from defects renders the best quality, as in crown-glass, three times as costly as the common. The expense of production to the manufacturer is in each case the same; the materials, the labour, the fuel, the same for each. Success, therefore, clearly hinges on the proportion of good glass which a manufacturer can obtain. The six qualities of sheet-glass may each consist of six different thicknesses, forming thus, in all, thirty-six varieties.

When this manufacture was new in England, the size usually blown was 36 inches long, and 20 wide. The usual size now is 47 inches long by 32 wide, and cylinders are occasionally blown 77 inches long, but large sizes and heavy weights are accomplished only by workmen of the first class. A sheet of this latter size, containing twenty-one ounces to the foot, would require for its formation a lump of glass upon the gatherer's pipe, of no less than 38 lbs. in weight.

The size which sheet-glass can thus reach is obviously a great advantage, and adapts it to many purposes from which the limited dimensions of crown are excluded. It was this glass

* See p. 185, *ante*.

that covered the Great Exhibition in 1851. A cylinder was blown to cut, as the phrase is, 49 inches by 30: this was sub-divided into three panes of 49 inches by 10. About 300,000 of these, extending over a million square feet, and weighing upwards of 400 tons, were the work of a few weeks, and this without absorbing or disturbing the ordinary produce of the manufacturer. The energy of the glaziers was equal to their task: 18,392 panes were fixed in the roof in one week, by eighty men, 108 panes being accomplished by one man in a single day.

But sheet-glass has its faults as well as its virtues: it is devoid of that brilliancy of surface for which crown is so remarkable. It is subject, also, to undulations on the surface, the precise origin of which it is difficult to explain. Mr. Shaw, in his admirable lecture on the glass manufacture, as illustrated by the Great Exhibition, speaking of this defect, says, "When the divided cylinder is softened by heat, and either allowed to flatten by its own weight, or flattened by the workmen, the concave interior of the cylinder has to expand, and the convex exterior to contract, as the curved surface becomes plane. Were this contraction and expansion to take place uniformly throughout the glass, the undulation in question would not occur, but since one part invariably yields somewhat more readily than another, perfect flatness cannot be attained."

It is, however, more probable that this undulation is produced in the operation of blowing, and is due to the double movement of the particles of glass which accompanies the formation of every cylinder, the one movement being parallel to the axis of the cylinder, and the other in planes at right angles to that axis.

Having thus briefly described the two distinct processes which converge in one result, a sheet of window-glass, I shall now notice the circumstances under which these two processes have attained their present position, and I shall here avail myself of the valuable information which M. Bontemps has provided.

We have no evidence whatever by which to determine the relative antiquity of these two processes. The cylindrical process is the only one mentioned by Theophilus in the thirteenth century, and this method was adopted by the Venetians, as the more uniform thickness which resulted from it insured, in their coloured glasses, a greater uniformity of colour. But in France, England, and the north of Germany, the cylindrical process fell gradually into disuse, as the demand for coloured glass diminished, and at length in these countries the rotary principle exclusively prevailed, but it was so imperfectly carried out, that the tables seldom exceeded 30 inches in diameter, and were of very variable thickness.

Bohemia, however, still retained the cylindrical process which she had learnt from Venice. and with such success that when the French were in need of large and good glass, they imported it from Bohemia.

Thus it was until the commencement of the eighteenth century. Then a French officer, M. Drolenvaux, formed the project of introducing the Bohemian method into France. He constructed a company, brought workmen from Bohemia, and established a manufactory at Lettenbach, in 1730, with great success.

From this resulted, in France, Belgium, and the north of Holland, where the style of building required panes of large size, the abandonment of the rotary principle and the adoption of the cylindrical; and towards the close of the last century, a manufactory, near Abbeville, in Normandy, one in Hanover, and two others near Bamberg and Aschaffenburgh, were the last in which the rotary method was employed.

The last of these, that near Aschaffenburgh, was visited by a glass manufacturer in 1844, and he was much surprised at the very slow and unsystematic manner of proceeding which prevailed there. The gatherers held in their mouths a piece of pasteboard, turned up so as to protect their faces. The nose of the glass, after it had left the pipe and was attached to the ponty, was helped open with a piece of wood, and, after the table had been formed, it was laid upon a bed of small coal or coke and the ponty detached. The table was then piled in the annealing kiln.

In England, the manufacture of crown glass maintained its position, notwithstanding its abandonment abroad, and attained to such superiority over the spread or broad glass, to the rudeness of which I have alluded, that the former was used for all houses of the better class, while the latter was confined to poorer dwellings.

The inferiority of this spread glass, manufactured on the German principle, but by no means so good as the German glass, tended to prejudice the public against all glass manufactured on the cylindrical principle. This prejudice was, however, gradually overcome by the establishment in England of the nanufacture of cylindrical glass, according to the process which I have already detailed, introduced from France, and from which resulted a glass which entirely displaced the manufacture of spread glass.

The introduction of this new manufacture was due to Mr. Chance and Mr. Hartley, who, on visiting, in 1830, the works of M. Bontemps, near Paris, were much struck with the advantages of the glass made on this principle, and, having secured the co-operation of M. Bontemps, they commenced the process at their own works in the autumn of 1832. So great, however, were the difficulties to be overcome, that it was not till 1838 that the manufacture of this glass was completely established. Since that time there has been great progress; and the sheet glass now manufactured in this country, though inferior in colour, is in other points generally superior to that of the foreign teachers.

A further development of the sheet-glass manufacture in England was the process of grinding and polishing this glass by machinery, whereby a new branch of manufacture was established, which has furnished glass peculiarly applicable for purposes for which none previously existed.

A fitting companion for this, though not within the limits of blown window-glass, is the remarkable invention of Mr. Hartley, by which glass, conveyed directly from the glass pot to a table, is rolled into sheets without employing in each operation more glass than is wanted for each plate of glass, however small it may be. This glass is admirably adapted for those purposes in which translucency only is required.

The greatest stimulus, however, that has been given to the crown and sheet glass manufacture was the abolition of the duty in 1845. That abolition has produced a somewhat paradoxical result. While the quantity of glass made has increased in the proportion of three to one, the number of manufacturing firms has diminished in the proportion of one to two. In 1844 there were fourteen companies engaged in the manufacture. In 1846 and 1847, following the repeal of the duty, the number had increased to twenty-four. The glass trade, after the removal of the heavy burden imposed upon it, seemed to offer a fair opening for money seeking investment. The demand for glass was so great that the manufacturers were in despair. Glasshouses sprang up like mushrooms. Joint-stock companies were established to satisfy the universal craving for window-panes. And what was the result? Of the four-and-twenty companies existing in the year 1847, there were left, in 1854, but ten. At this time there are but seven in the whole United Kingdom. Two, established in Ireland, have ceased to exist. In Scotland, the Dumbarton Works, once famous, were closed, in 1831, by the death of the partners, afterwards reopened, and again closed. The seven now existing are all English.

I turn, in conclusion, from this somewhat melancholy picture to a more cheering subject, the great ends which, from small beginnings, this manufacture has accomplished. The glazier of Pompeii little dreamt that the time would come when the substance that he handled, then so rare, would minister through the world to the health and pleasure of mankind; that beneath it trees would flourish, transported from a foreign soil; and that, cheaper than wood itself, it would combine with iron to form the largest building on the earth. But from Pompeii to the Crystal Palace there has been a progress of nearly twenty centuries, and a still greater progress in action than in time. That progress has been marked by no sudden revolutions, such as have distinguished the development of other efforts of mankind. The problem of blowing glass into a sheet admits of limited solutions, a cylinder or a sphere. Through one or other of these forms the first blown sheet cannot but have passed, and through one or other all pass now. But the progress has been none the less for lack of revolutionising discoveries. Minute and apparently unimportant changes, perceptible only to those near at hand, have in silence done their work.

Still, the development both of its processes and its applications is incomplete. Sir Joseph Paxton's glass arcade, stretching over the streets of London, and Dr. Sleigh's city of glass, in which invalids will inhale the gentle air of Madeira,—these are faint foreshadowings of the destiny of this wonderful substance.

And, perhaps, the day may come when some future chronicler of glass shall smile at the barbarians of the nineteenth century, who could not make window-glass without defects, and shall exhibit those defects as the curiosities of a bygone age.

THE CHURCH OF STE. CLOTILDE, PARIS.

THE scaffolding which surrounded the principal entrance of the new church of Ste. Clotilde has been removed within the last few days and has exposed to view one of the best portions of the building. We use it as the occasion to give an engraving of the exterior of the church from a drawing made on the spot for the purpose. A sketch of one of the smaller entrances will be found in our 12th volume, p. 602. The church is situated in the Rue St. Dominique, not far from the Chamber of Deputies, or, as it is now called, of the *Corps Législatif*. It has been about ten years in progress, and has cost a very large sum of money. The sculptor has been allowed to exercise his skill: the windows are filled with stained glass; and the walls and vaults of the chapels are decorated with colours and gilding. There is a largeness about its proportions which is striking in a modern work of pointed architecture, but many of the details are pinched and mean, and the foliage in parts is poorly carved. The triforium is flat and ugly. A large number of artists have been employed both in the carvings and the glass, and a varied feeling is of course observable. One series of the windows, ten in number, was designed by M. Galimard and executed by M. Lusson, of Metz. Some of the French critics, after praising the work of M. Lusson in several respects, and acknowledging that most of the windows are harmonious in colour, complain that the drawings have not been followed so accurately, especially in the heads, as they should have been, and urge that artists should themselves become glass-painters for the execution of such works.

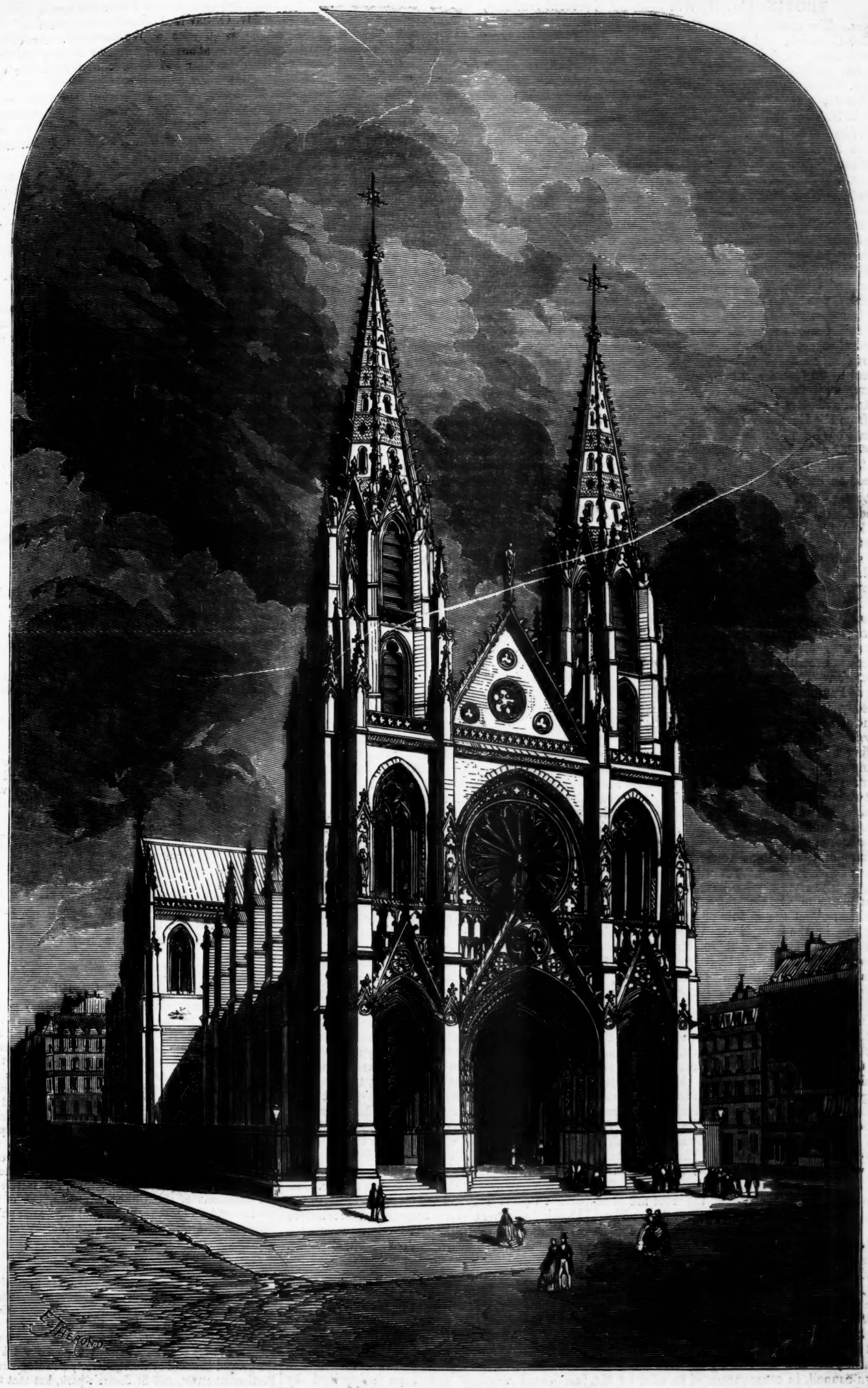
The church of Ste. Clotilde must be regarded as the largest and most important modern work of Gothic art in France, and will probably prove

"The fruitful mother of a hundred more."

PROJECTION CASES IN THE METROPOLIS.

YOUR correspondent, "District Surveyor," prejudges the case. The Board of Works have the power to grant permission, and no clause in either the Building Act, or the Metropolis Local Management, says such works may not be executed. Not only is it not so said, but, in addition, it is distinctly stated that, subject to the consent and approbation of the Board of Works, such works *may* be carried out, consequently a *prima-facie* case exists of their admissibility. But, after all, the word "projection" is the word to be defined, as also is the word "building," and also the words "regular line of the buildings." Strange to say that none of these important points are to be found in the interpretation clauses of the Act. Consequently every individual may form his own—possibly very inaccurate—conclusions on the matter. But one point only is clear, that every case must stand on its own merits, as every one would be modified by the particular circumstance. What are, and what are not, "projections,"—and what are, and what are not, "buildings," must be defined. It is needless to say that what really infringes on, alters, or varies a line of street should be strenuously resisted, but a line may be improved by a filling in of spaces between buildings that have for many years been brought forward and existed as buildings.

TEMPORA MUTANTUR.



THE CHURCH OF STE. CLOTILDE, PARIS.

PROVINCIAL NEWS.

Lynn.—The new workhouse, according to the *Norfolk Chronicle*, will be fit for habitation by Midsummer. On Friday in last week the tenders for gas-fittings were opened, and that of Messrs. Wheeler, of Nottingham, for 127*l.* being the lowest, was accepted. The others were 143*l.* 158*l.* 210*l.* and (on a different plan) 257*l.*

Cradley.—The new National School-rooms, erected here, from the designs and under the direction of Mr. F. S. Smith, of Stourbridge, architect, have been opened.

Ripley.—New National Schools have been erected here at the expense of the Butterley Ironworks Company. There are two school-rooms, capable of accommodating 300 children, and having a class-room and teachers' residence attached to each. They are warmed by hot water, and ventilated by a patent process. The architect was Mr. H. I. Stevens, of Derby, and the cost of the whole upwards of 2,300*l.* The two school-rooms are each 54 feet by 18 feet, and separated by a wooden partition easily removable, so as to form together a room of 54 feet by 36 feet. The class-rooms are 18 feet square, with fire-places and ovens to warm the children's dinners. The whole is supplied with gas from the Butterley Ironworks. A new kind of desk has been introduced into the schools, so constructed as to form either table, desk, or bench, with little trouble. The schools were opened on Friday before last.

Preston.—On Thursday in last week, the foundation stone of a new cotton spinning-mill was laid for Mr. T. C. Hincksman, in Croft-street, near the Maudlands railway station. The stone was laid by Mrs. Hincksman, and a bottle placed under it contained the names (amongst others) of the different contractors, viz. Messrs. Watson and Alsup, engineers; Messrs. Cooper and Tullis, masons and bricklayers; and Mr. Tomlinson, joiner. The mill, when completed, will be 125 feet in length, 93 feet in breadth, and four stories high.

Dundee.—The new Royal Exchange here, in West Panmure-street, was inaugurated on Tuesday in last week. Its erection was set about some three years since, according to the *Warder*, the funds being raised in shares by leading members of the Dundee Chamber of Commerce. Competition designs were asked from several architects of repute. Of those sent in two were understood to divide approval equally, but it was deemed advisable to obtain a design from Mr. Bryce, of Edinburgh. This was accordingly done (after remunerating the authors of the designs referred to); and the plans of Mr. Bryce have now been carried into effect. The style of the building is that particular phase of Gothic which prevailed on the continent about the middle of the fifteenth century, as in the Hôtels de Ville, of Brussels, Louvain, Ghent, &c.: these Mr. Bryce has taken as the type of this Exchange. The main building abuts on Panmure-street, a wing containing the offices being thrown back at the west end, so as to form, with the end of the front building, two sides of a small square or place: it is in contemplation to finish by the erection of similar offices, at some future time, on the west side of this square. Seven tall windows light the hall. Over the cornice is a range of dormer windows. The tower is carried up one stage above the hall, and is of a very plain character, considering the work on the rest of the façade. It is terminated with a carved parapet and flat roof. The hall occupies the whole of the upper floor of the front building, its internal dimensions being about 77 feet by 34 feet. The timbers of the roof are ornamentally treated and open to the ridge. There are seven main couples springing off corbels halfway down the walls, with arches and purlins transversely and longitudinally springing from pendents. The roof timbers are painted dark oak, with the bolt-heads, pendents, &c. gilded. The walls are painted a uniform stone colour.

Montrose.—The project for the erection of markets for garden and dairy produce, and a hall for the accommodation of 1,000 to 1,200 persons, has now been finally resolved on by the town-council, in consequence of an offer by Mr. Mitchell to relieve the council of the front site, and erect on it a building in continuation of his present erections, and by the exertions of the friends of the temperance movement, who, according to the local *Review*, are to make arrangement for erecting the contemplated public hall, at an expense of 900*l.* or 1,000*l.* with galleries, ante-rooms, &c. This hall would also serve the purpose of a corn exchange on Fridays. The markets will be put up by the council at a cost of 1,150*l.* These will have a spacious entrance from High-street for passengers, and a wide street passage from Baltic-street.

CHURCH-BUILDING NEWS.

Coggeshall.—The restoration of Coggeshall church, commenced in 1851, has been progressing, but much, it is stated, yet remains to be done. The nave and aisles, south chancel and tower, have been restored at a cost of 2,921*l.* 5s. 9d.; in addition to which, from private benevolence, the south porch door and font have been renovated. To complete the work, by restoring the north chancel aisle and entirely re-seating the church, 1,600*l.* are required.

East Grafton.—A memorial window has lately been placed in the church of St. Nicholas, East Grafton (by subscription of parishioners in the district), to the memory of the late Marquis of Ailesbury.

Doncaster.—Since the destruction of the parish church, rendering the opening of St. George's Chapel and the Townhall as places of Divine worship indispensable, the accommodation at Christ Church has been found inadequate. Hence it has been deemed advisable, says the local *Gazette*, to remove the vestries on each side of the communion-rails. This will give eight additional stalls, affording at the same time an improvement in internal arrangement. A new vestry is in course of erection on the north of the church, and in keeping with the exterior of the building. The work was let to the Messrs. Anelay, builders, and has been completed.

Loversall.—The church of Loversall has now been pretty fully restored. Exteriorly, the nave and south aisle have been replaced by new masonry, faced with Ancaster stone. The old windows have given place to cusped ones, filled with cathedral glass, and the terminations show figure carving. The north wall has been relieved of its unsightly buttresses. The south door has been covered externally with English oak and ornamental iron hinges, and panelled interior. Entering by the west door, the most prominent features are the stained-glass east window, and the raised roof of the nave resting upon open rafters. The former internal arrangement has been superseded by open stalls through the entire church. The screen which hid the interior from view on entering is cast aside, thus leaving the west door free from impediment, and converting it into the principal entrance. The flooring which came to the tower arch has been removed, bringing into prominence the west window, till now obstructed. The piers and arches separating the nave from the south aisle alone remain of the former structure. They are octagonal columns, with plain mouldings of the thirteenth century. The masonry above them has been replaced, but the columns are merely renovated. Excepting the chancel, the floor has been laid with Minton and Co.'s patent tiles. Entering by the south door, the memorial window of the Fenton family is prominent. It occupies the centre window of the north wall of the nave, and is of the Cusped or Pointed style, in lieu of the flat-headed and ill-shaped windows formerly occupying that side of the edifice. The chief subjects depicted are "Christ Healing the Dumb," and "The Last Supper." The relatives of the late Rev. Luke Willey have erected a mural monument near the Fenton window. Mr. Athron, of Doncaster, took the contract for the masonry work; Mr. Race, of Balby, for the woodwork; and Mr. Walker, of Doncaster, for the plumbing. Mr. Wailes, of Newcastle-upon-Tyne, is the designer and executor of the Fenton memorial; and Messrs. Anelay furnished the Willey tablet. The incumbent has contributed 150*l.* towards the repairs, and rather more than an equal amount has been subscribed by parishioners and friends. The cost, however, will probably be about 600*l.* A portion of the stone required for the repair has been presented by Mr. G. Savile Foljambe, of Osberton Hall, from his quarries at Warmsworth. Accommodation for about 150 persons is now afforded. The restoration has been completed under the direction of Mr. Scott.

Stockport.—The Tenders for the erection of the Cemetery Episcopal Chapel were examined on Saturday last. Several were sent in, but that of Messrs. J. and J. Longson, builders, for 690*l.* was accepted.

Ormiston.—The foundation-stone of a new church for the parish of Ormiston, in the south of Scotland, was laid on 28th ult. The church is erected by the Earl of Hopetoun, sole heritor of the parish.

THE LATE MR. JOSEPH NEELD, OF CHIPPENHAM.

AT the last meeting of the Institute of Architects, Mr. James Thomson communicated the death of Mr. Joseph Neeld, M.P. who was an Honorary Fellow, and drew attention with justice to the improvements made by Mr. Neeld in the homes of his tenantry at Grittleton. Mr. Britton, in his "Autobiography," which is now fast approaching towards completion, gives some account of Grittleton and of its owner.

Speaking of the changes observable there since he first knew the neighbourhood, Mr. Britton says:—

"These important and commendable improvements have been gradually made within the last twenty-seven years, by Mr. Neeld, one of the members for the borough of Chippenham, who purchased the manorial estates of Grittleton from Colonel Houlton in 1828. Since that year he has bought other land in the same parish, with lands, manors, and advowsons in adjoining parishes, and thus created a domain of large extent, and placed the whole under one system of general amelioration and good cultivation. It is generally known that Mr. Neeld came into possession of great wealth on the demise of his maternal great-uncle, the late Philip Rundell, esq. of Ludgate-street, London, an eminent goldsmith, who died at the advanced age of 81, on the 17th February, 1827. After many munificent presents, during his long and money-saving life, he bequeathed, by will, the very large sum of five hundred thousand pounds and upwards to be distributed to his nephews and nieces, to personal friends, and to public charities. The residue of his fortune was given to his 'great nephew and esteemed friend, Joseph Neeld, esq. the younger.' This item was presumed to amount to at least eight hundred and ninety thousand pounds. The personal effects were sworn to exceed one million of money, the utmost limit to which the scale of probate duty extends."

A spacious mansion for Mr. Neeld, designed by Mr. Thomson, of which we gave a view some time since, is still in progress of erection, and was intended to receive a fine collection of works of art.

THE NEW WAR-OFFICE.

SIR BENJAMIN HALL proposes, and wisely too, to move, shortly, for the appointment of a select committee to consider the expediency of obtaining a site for the concentration of all the Government offices in the neighbourhood of Downing-street; and if that committee should be of opinion that this is an advisable course, and the House of Commons should sanction it, he would then, he says, be prepared to give notice in the autumn for the purpose of acquiring the property, by the introduction of a Bill. He proposes then to go still further, and says that as the buildings to be erected on that site would be of a grand and national character, the designs ought to be thrown open for public competition, not merely by the architects of the United Kingdom, but of the whole world, in order that we might have some public buildings at least which would be worthy of the metropolis.

Such is the present state of matters in respect to the Government offices; but, whatever be the result, the erection of a new War-office appears to be resolved upon, and, failing the more complete scheme, it may be erected in Pall-mall, on the site of Buckingham House and adjoining premises, between that and the Ordnance-office. Sir Benjamin also states that he is prepared to lay before Parliament a plan for taking the ground bounded by George-street, Downing-street, Parliament-street, and St. James's-park, but that this can only be obtained in the usual way, by notice being given in the autumn and the introduction of a Bill in

the spring. It is for their lordships of the War Department to say whether they can wait for their new office till the new site be purchased; and, any way, Sir Benjamin puts it as a question whether so large a department should be permanently fixed in Pall-mall, on a restricted site and so far from the other offices.

COMPETITIONS.

St. Aloysius's Schools, Ushaw, near Durham.—Some time since, Dr. Newsham, the president of Ushaw College, desired Messrs. Joseph and Charles Hansom, and Mr. E. W. Pugin, to send in competing drawings for a school to contain upwards of one hundred students: the latter gentleman was the successful competitor. The building is of a three-sided quadranglar form, the offices forming a quadrangle behind. The arrangements include chapel, study, class-rooms, dormitories, &c. The communication between the present college is effected by means of the museum (which is intended to be 160 feet in length), and a small cloister. An infirmary will be built between the old and new college, with direct and separate communication from each. This is complete in itself, independent of the rest of the establishment. The quantities have been taken out by Mr. Eyre, of Liverpool, and the plans are now in the hands of the contractors. The 12th inst. is the day appointed for the delivery of the tenders.

Grantham Cemetery.—About seventy designs from various architects were sent in. It appears that the choice has fallen upon a design by Mr. Browning, of Stamford.

Luton New National Schools.—The designs submitted were nineteen in number, and two were chosen for consideration, of which one bearing the motto "Fides" was finally selected. Mr. John Cumberland, of Luton, is the architect. The proposed buildings consist of a school for 300 boys and one for 250 infants, a residence for the master and another for the mistress, with proper offices to the schools and residences. The total cost is not to exceed 1,800*l.* Mr. Cumberland's design is estimated to come somewhat under that amount.

REFORMATORY AND INDUSTRIAL SCHOOLS.

THE benevolent movement in favour of juvenile Reformatories and Industrial Schools is extending rapidly throughout the whole country, and new buildings are arising in various districts, in which to carry out the philanthropic objects of the movement.

The chief stone of the Warwickshire Reformatory Institution was laid by Lady Leigh, on Wednesday in week before last, near the village of Weston, on a site of 13 acres, which, with two other pieces of land, comprising in all about ninety acres, will be used for the purposes of the institution. The building will be erected under the superintendence of Mr. Hill, the county architect. It will be of brick, of the plainest possible character, and is to consist of a school-room, to be used as a chapel, and of dormitories, workshops, a residence for the master, domestic offices, cooking kitchen, wash-houses, &c. The site is on a hill, high and dry. It is said that Lady Leigh intends to form a committee to establish a Girls' Reformatory near Coventry.

The first stone of the Castle Howard Reformatory was laid on Monday in week before last by Lady Mary Labouchere, a sister of the Earl of Carlisle, on whose estate the building is to be erected. This institution, we understand, will be capable of receiving from forty to fifty boys, and the building committee hope to have it opened before the end of the year. They have, it is said, already made provisional arrangements for the care of thirteen juvenile offenders, nine of whom will be received into the buildings near Castle Howard, kindly placed by Lord Carlisle at the disposal of the committee for temporary occupation, and the remaining four, by agreement with Mr. T. B. L. Baker, the well-known and successful founder of the Reformatory School at Hardwick Court, Gloucestershire, will be sent to that institution.

At Manchester, on Wednesday week, a meeting of city magistrates, convened by a mayoral circular, was held, to consider the desirability of establishing Juvenile Reformatories in this district. In a discussion which took place, a strong sentiment seemed to be entertained generally, that there was a necessity for something being done, but that from the nature and magnitude of the evil to be dealt with, it could not be grappled with effectually by any voluntary effort, and that to be efficiently done it must be done by the State. It was resolved to urge upon Government and upon Parliament, the necessity of giving, by an Act to be passed during the present Session, the same facilities for the erection and maintenance of such institutions as now exist for the erection and maintenance of prisons. A committee, consisting of the mayor and other gentlemen, was appointed to take the requisite steps for furthering the objects of the meeting.

A proposal has been made by the magistrates of Salop to join those of Herefordshire, in the establishment of a Reformatory for juvenile offenders. The Herefordshire Bench, however, are not at present prepared to entertain the offer.

At Hull, on Wednesday in week before last, the chief stone of Ragged and Industrial Schools, was laid by the Earl of Shaftesbury, in the presence of a large concourse of spectators. The site of the building is a plot of ground, approaching a triangular shape, containing 1,650 square yards, situate between Marlborough-terrace and Norfolk-street. The master's residence will be on the western side of the ground, adjoining houses erected by Mr. Turpin, and will be separated from the school buildings by the road for the entrance of the girls, and the playground to be appropriated to their use. The playgrounds are separated by the schools and dormitories. The principal buildings, according to the *Hull Packet*, will comprise—on the ground-floor — industrial rooms, 28 feet by 29 feet; and 27 feet by 16 feet; committee room, 18 feet by 11¼ feet; kitchen and scullery, each 15 feet by 15 feet; boys' and girls' bath rooms, each 15 feet by 15 feet; and on the first floor, boys' school-room, 37 feet by 28 feet; girls' school-room, 25 feet by 28 feet; and boys' and girls' dormitories, 30¾ feet by 15 feet each; with all other necessary appurtenances. The upper school-rooms are capable of being thrown into one when occasion requires it, and can then be used as a "Ragged Church" for preaching, &c. The building will be in the style of the Tudor period, with stone dressings to the quoins, windows, and door openings, &c. There will be a bell turret; and provision is also made for a clock. The elementary schools will accommodate 150 children, and the industrial rooms about 100 additional pupils. The dormitories are constructed for twenty persons. The contracts for the new buildings are not yet let. The architect is Mr. William Botterill, of Hull.

RESTORATION OF THE ABBEY OF ST. ALBAN.

AN influential and numerous meeting of the nobility, gentry, and clergy of Herts, was held at the Town-hall, St. Alban's, on Thursday in last week, "to consider the best means of restoring and upholding the Abbey Church of St. Alban's, and of obtaining for it the dignity of a cathedral." The chair was taken by the Earl of Verulam, and the meeting was addressed by the chairman, and by the Marquis of Salisbury, Lord Robert Grosvenor, Archdeacon Grant, Mr. Puller, Lord Robert Cecil, and other gentlemen, all of whom supported the object of the meeting: at the close, subscriptions to the extent of 4,205*l.* were announced. The *Herts Mercury* of last week gives a full report of the proceedings, and also of the report on the state and capabilities of the church, drawn up at the Lord Lieutenant's request by Mr. G. G. Scott, architect. The report states that the plan of the church being substantially like that of most of our cathedrals, there can be no reason why it should not be as well suited to its purpose as they, but that the reporter would wish to see it much more so, and thinks this also can be effected; but, executed on a scale becoming the dignity of the church, the cost of rendering it fit for cathedral uses would, in his opinion, come to from 12,000*l.* to 13,000*l.*; besides which other works are suggested, which would cost about 5,000*l.* or 5,500*l.* In respect to the first or most essential order of alterations, the reporter says: "The refittings would consist of a new altar-table of suitable design, with proper coverings and appurtenances; an episcopal throne of becoming dignity; canopied stalls for the dean, sub-dean, and chapter, with desks and subsellæ in front and all requisite provision for the vicars choral and choristers; a low choir screen of open metal-work across the eastern arch of the tower, and all the minor requirements of choral arrangement; a new organ, so placed and constructed as to be an ornament rather than an obstruction, and conveniently arranged both for the choir and the congregation; and a handsome new pulpit (perhaps of Purbeck marble); and oak seats throughout the part to be occupied by the congregation, with requisite screens to sever this from the parts not so used. All these should be executed in a style proportioned to the magnificence of the building, their details perhaps agreeing in character with the style of the choir itself. The pavements of all these portions should be proportioned in richness to their position; but in no case interfere with any ancient sepulchral stones, which must be carefully preserved *in situ*."

The repairs immediately connected with these alterations must be considerable and of the most delicate character, every touch being thoroughly considered, and of these Mr. Scott gives some slight details by way of example, particularly as relates to the projecting pilasters of the Norman piers, and to questions of decoration. Spacious vestries also would require to be erected for the chapter and choir on the site of the ancient vestries. The second-class of works recommended comprises the general restoration of the interior of the choir, the complete repair of the aisle roofs of the nave and other roofs, and of the foundations, particularly of the nave aisles, drainage of the edifice, and other works. A third-class of restorations is also slightly indicated, but "no attempt should be made to *smarten* up the old Norman structure." Dr. Nicholson is of course exerting himself on the subject.

METROPOLITAN BOARD OF WORKS.

A SPECIAL meeting of this Board was held on 4th inst. when Mr. Bazalgette read his report on the sewage interception and main drainage of the districts south of the Thames. As to the merits of the scheme, we shall be better able to judge when the report is printed, as it has been ordered to be. Meantime, we may quote the following preliminary remarks, and also a paragraph as to the estimated cost of the various works:—"The Board will probably remember that in 1853, pursuant to directions by the then Metropolitan Commissioners of Sewers, designs for intercepting sewers on the south side of the river were prepared by me. The plan now submitted for your consideration will be found to resemble in its main features the former scheme: it therefore becomes necessary to recapitulate several of the leading considerations referred to in my report of 1853, and in the joint report by Mr. Haywood and myself upon the northern drainage in 1854, whilst I have at the same time endeavoured to take advantage of all the information gained in the subsequent preparation of the northern drainage scheme, and to profit by the experience of the last three years. The modifications now introduced will, I trust, be regarded by you as improvements.

The estimated cost of the works herein recommended will be as follows;—

ESTIMATE.

High level sewer, from Clapham to Deptford, and branch	£199,226
Extension from Deptford to Plumstead...	155,550
Low level sewer, from Putney to Deptford, and branch	209,000
Reservoir and land for pumping stations	103,140
Engine-houses, engines, pumps, &c.	164,780
	£831,696"

Having resolved that the report be received, and printed as soon as possible, the Board proceeded to other business, amongst which was a communication signed "Lionel Gisborne," accompanying plans and papers, on the Thames embankment (from London-bridge to Westminster-bridge, it was alleged), to which the chairman said Mr. Bazalgette and he attached some importance, and which was referred to the works committee by a large majority. It was then resolved, "That it be referred to the Improvement Committee to consider and report to this Board whether any alteration ought to be made in the level between Holborn-hill and Skinner-street, before the corporation commence letting their vacant ground on building leases, it being apparent, from the state of forwardness of Victoria-street, that no time should be lost in coming to a decision on this long-needed improvement."

ROCHESTER NEW BRIDGE.

IT is expected that the new bridge at Rochester will be opened in June next; and it it intended that the demolition of the old one shall be commenced on the day of opening. The design of the new bridge, as we have before noted, is by Sir William Cubitt. It is to stand directly in a line with the high streets of the two towns. The main bridge is of cast-iron, measuring in length about 485 feet by 40 feet wide, and is composed of three arches, namely, two side arches of 140 feet span each, and one centre one of 170 feet span; the rise on the raised side of the former being 14 feet and the latter 17 feet. Each arch consists of eight main ribs, which in the smaller arches are cast in five pieces, and in the larger one in six. The ends of all these castings are planed by machinery made expressly for the purpose. The spandrils of the arches are fitted in with ornamental cast-iron work, which serves to carry the covering-plates of the roadway. The whole is surmounted by a heavy moulded cast-iron cornice and parapet railing, the former intersected with the moulded stonework of the piers and abutments. The roadway and footpaths are carried entirely by cast-iron

plates, bolted to the tops of the spandril castings. These plates are overlaid with planking, upon which granite pitching is placed. This superstructure has been contracted for by Messrs. Cochrane and Co. of Woodside, near Dudley. The total weight of cast iron is 2,500 tons, and about two-thirds is already fixed in the place. The foundations upon which the superstructure is being erected have been completed by other contractors. They are formed of cast-iron hollow cylinders, sunk through the bed of the river on to the rock, filled with concrete and brickwork, and bound together by cast-iron curtain-plate and covering-plates, on which the masonry of the piers and abutments is placed. The centre arch is still at Woodside, together with the skeleton of a swing-bridge, with a clear opening of 50 feet, and forming a fourth arch of the Rochester-bridge. This bridge consists of six wrought girders, carried by and turning upon a cast-iron roller-path, 30 feet in diameter, and thirty cast-iron rollers. The gearing is so arranged that a very small force will be required to open and close the bridge, although its total weight with roadway complete will exceed 300 tons. The whole of the works of the bridge have, since their commencement, been under the superintendence of Mr. John Wright, the resident engineer.

ARCHITECTS AND CORPORATE BODIES.

I VENTURE to draw the attention of architects and builders to the following facts, in the hope that in dealing with municipal corporations they will take care that their contracts are sealed with the corporate seal, otherwise they may find that the law provides them no remedy for recovering amounts due to them.

In the year 1854, in consequence of an advertisement for plans, sections, elevations, and estimates for a new town-hall and other buildings in the borough of Preston, I became a competitor for the same, and obtained the first premium of 100 guineas, mine being deemed the best plans. The plans became the property of the council, but they were considered too expensive, and the building committee decided upon postponing the building and having a less expensive plan.

Subsequently, by letter from the town clerk of Preston (which embodied resolutions passed at a meeting of the council on the 2nd October, 1854), I was requested to prepare a design for the erection of buildings at an expense of about 16,000*l.* In consequence of this letter, and of instructions from the building committee as to the mode of carrying the resolutions into effect, I incurred considerable expense in preparing working drawings and specifications, and by taking journeys to attend committees in Preston, on request almost invariably by letter from the town-clerk, as well as journeys to London to consult Mr. Barrett in reference to fire-proof floors, and to give him the requisite information to enable him to prepare his specifications.

I subsequently furnished the committee with a design, and a statement containing several estimates. On the 2nd of January, 1855, I received a letter from the town clerk, stating that the council had determined to carry out my plan No. 1, so far as some old buildings were concerned, the cost of which I had estimated at 9,500*l.*; and afterwards I was requested to meet the building committee, and in the meantime to inform the town clerk what my rate of charges would be for carrying out the work. I accordingly informed the town clerk what my charges would be. The council on the 16th January, 1855, decided upon additional buildings, which increased the cost to 12,000*l.*; and afterwards the building committee gave me instructions for constructing the whole of the floors fireproof, and for putting in plate-glass windows, iron shutters, warming and ventilating apparatus, and certain fixtures and gas apparatus; thereby increasing the cost very considerably.

In accordance with the instructions of the building committee, I prepared the whole of the plans, sections, and drawings, and quantities of the different works. The total amount at which I estimated the works (with the extras) could be completed, was 16,151*l.* The total amount at which they were contracted for was 15,536*l.* Being less than my estimate by the sum of 615*l.*

On the ground that the estimates were so much more than the council expected, they subsequently declined to proceed with the erection of the buildings. I believe that the reason the council complained of the expense was, that the building committee never explained to the council that they had requested me to make any extras, such as fireproof floors, &c. which were, of course, very serious items of expense.

I afterwards sent in my bill for the work I had performed, and as the corporation declined to pay it, I commenced an action to recover the amount. In that action the corporation pleaded that they had never bound themselves to perform the agreements by any contract under seal. There being, therefore, no contract under seal, I was advised that the corporation could not be compelled to pay me the amount of my bill. In consequence of this *legal* difficulty I was induced to accept from the corporation the sum of 330*l.* in discharge of my claim of 875*l.* 10s. 3d. Had I persisted in going on with the action, the result would, no doubt, have been, that I should have been nonsuited, or, in other words, that I had no ground of action, simply because the agreement being with a corporate body was not under seal. After this I might, indeed, have gone to a Court of Error, where, to say the best, it was very doubtful whether the doctrine that corporate bodies can contract under *seal only*, would not have been upheld. Had I adopted this course, the expense would have been enormous; and you therefore cannot wonder that, with almost the certainty of losing the trial, and consequently of having very large costs to pay, I was induced to accept a sum of money, which, after deducting interest on the amount laid out by me, and the costs which I had incurred, did not cover the amount I had actually expended on behalf of the corporation. The offer to compromise the action proceeded from the corporation, and not from myself; and this, in my opinion, affords strong testimony that the corporation considered that I was in justice entitled to remuneration. If my services had been rendered to an individual instead of to a corporate body, no doubt the law would have enabled me to recover the whole of my charges; and it appears to me a great violation of right that in such a case there should be any distinction between individuals and corporate bodies.

In future I shall of course take care not to lose the power of enforcing my just claims by inattention to legal technicalities; and I hope that your readers may also be warned from the difficulty into which I have fallen.

WILLIAM HILL, Architect.

IRON CHURCHES.

AT committee meetings of the Ecclesiological Society, held on March 11th and 12th, 1856, at Arklow House, Mr. Beresford Hope in the chair, Mr. Slater, in presenting the finished engravings of the plates for the concluding number of the *Instrumenta Ecclesiastica*, informed the committee, that in compliance with their request he had obtained an estimate by Messrs. Skidmore, for executing the designs in wrought and cast iron; and one from Messrs. Troughton and Bevan, for executing them in cast iron;—the first, 2,500*l.*; the second, 2,150*l.* Messrs. Skidmore further said, "We will undertake to make a church capable of holding 800, with enrichment equal to a church costing in stone 7,000*l.* for one-third less than this amount. If iron is to be considered a material of our age and locality, and to be used as our forefathers used every material of their day, giving it its natural expression, adding art and beauty to the constructive form, it would be unlike their actions, and unworthy of ourselves, to use a new (for considering the facility of its production in this day, and its great and extending use, it may fairly be ranked as a new) material, only as a cheap expedient, instead of giving to it that development in Christian art, of which it is so capable. In furtherance of these views, we would suggest the use of geometrical forms of iron (the constructive supports of the walls), filled in with marble of various colours: as also carving or ceramic art for the same purpose. The interior would afford ample scope for carrying out that floral treatment so much used in the fourteenth century. The iron also would require coating with pigments to preserve its surface, and would form a ready means of illumination; the renewed use of crystals and gems, as in ancient metal work; the use of enamels, which present facilities would permit to a greater extent, even than in ancient work; the covering wall-surfaces with tapestry, having historical subjects; reredos of brass, or silver and brass combined,—are also objects to be aimed at."

THE FITZROY DRY DOCK AT PORT JACKSON, NEW SOUTH WALES.

THE graving establishments of Port Jackson consist of the Waterview Dry Dock and the Australasian Steam Navigation Company's Patent Slip, both for some time finished and open, and the Fitzroy Dry Dock, which is rapidly approaching to completion. The Fitzroy Dry Dock is situated on the south-east of Cockatoo Island, to the westward of the harbour of Sydney, at the commencement of the Parramatta river. The basin of the dock has been excavated out of compact sandstone and hard shale. The original surface of the island at the point selected for this work had 40 feet of sandstone above high-water mark, which had first to be cleared away: 3,000,000 cubic feet, or 200,000 tons, of stone have thus been removed. A considerable portion has been cut and employed to line the lower portion of the dock, which is excavated out of hard shale. The floor of the dock is formed of massive blocks of stone, each three to six tons in weight. They are so cut as to form an inverted arch of 72 feet radius. The altar stones, or steps along the sides of the dock, are of the same massive description; each stone forming two steps, of a foot tread. The piers between which the caisson rests have two sills, 20 feet apart, to which are bolted, with 1¼ inch copper bolts, the timbers, 12 by 12, to form a surface against which the caisson presses when the water is pumped out of the dock,—the pressure caused by the water outside being calculated to be equal to about 400 tons distributed over the surface. The *Sydney Morning Herald* gives the following comparison of the dimensions of the Fitzroy Dock with those of the new "South Inlet" Dock at Portsmouth, together with the cost of each:—

	South Inlet Gov. Dock, Portsmouth.			Fitzroy Gov. Dock, Sydney.	
	Ft.	in.		Ft.	in.
Extreme length	335	0	...	336	0
Length of the floor	302	0	...	300	0
Extreme breadth	80	9	...	79	0
Extreme depth	29	0	...	27	0
Depth of water at spring tides	23	0	...	21	9
Width at entrance	70	0	...	60	0

The South Inlet was completed in ten years at a cost of 120,000*l.* "The Fitzroy," adds the *Herald*, "will have taken about eight years when finished, at a cost to the colony of say 55,000*l.*; although the real value of the work which has been done up to the present time has been (after careful allowance for the difference between forced and free labour) estimated at 100,000*l.*" Capt. K. Gother Mann and Mr. James Henry Thomas (the latter officer, brother of Mr. Cave Thomas, the artist, having prepared the designs for the whole of the extensive plant of machinery, and for the additional buildings, &c. now in course of completion) are carrying out this important work by help of forced labour, in most respects of the worst kind.

Notices of Books.

On Agricultural Chemistry, and the Nature and Properties of Peruvian Guano. By J. C. NESBIT, F.G.S. &c. Fourth edition. London: Longman and Co.

IT should be unnecessary now to urge the importance of applying science to agriculture, and promoting that great development of its products, the foundations of which are now being laid by engineers, chemists, and other men of science. The fourth edition of a work on agricultural chemistry, by the principal of the Agricultural and Chemical College, Kennington, carries its own recommendation on the face of it. The volume is composed of lectures delivered at various farmers' clubs and agricultural meetings during the last few years, and its main object is to render more familiar and popular the science of agricultural chemistry, and to divest it as much as possible of dry details and technicalities. A farmer is a manufacturer, and must study processes.

Miscellanea Graphica: a Collection of Ancient Mediæval and Renaissance Remains in the possession of Lord Londesborough. Illustrated by FREDERICK W. FAIRHOLT, F. S. A. London: Chapman and Hall, Piccadilly.

THE many valuable and rare antiquities in the collections to which Lord and Lady Londesborough have devoted no small amount of money and care, are being elegantly illustrated by the careful pencil of Mr. Fairholt. Amongst the Nos. of the "Miscellanea Graphica" now before us are a great variety of curiosities, such as bells, drinking-cups, altar furniture, ivory carvings, bronzes, jewelry, enamelled plaques, watches, warlike instruments and armour, implements of punishment, gold ornaments, stirrups, &c. &c. Many of the illustrations are illuminated in gold and colours, such as a morse of fourteenth century, two plaques of thirteenth century, altar furniture, Merovingian and other ornaments, &c. Perhaps one of the most interesting of the objects illustrated in the few Nos. referred to is the Bell of St. Mura. This curious relic is engraved the full size of the original. It is remarkable as a work of art, as well as for its venerable antiquity and the superstitious regard in which it has long been held by the Irish. Its legendary history narrates how it came down from heaven, ringing all the way, and how the tongue re-

turned to the skies. It never was used, therefore, as a bell, so far as tradition indicates, but was turned into a medicinal drinking-cup. For centuries the famous abbey of Fahan, near Innishowen (county Donegal), was noted as its depositary. The material of this little bell is bronze, and its form is quadrangular, like other Irish bells of the seventh century. It is ornamentally encased; but by the accidental removal of one portion of the outer casing, a series of earlier enrichments were discovered beneath, and probably of ninth century workmanship. The portion disclosed consists of a tracery of Runic knots, wrought in brass, and firmly attached to the bell by a thin plate of gold. The exterior ornaments consist of a series of detached silver plates of various sizes, diversely embossed in a style of the eleventh century. The centre is adorned with a large crystal, and smaller gems have at one time been set in other vacant sockets round it; only one, of amber, remaining. The gold setting of other stones also appears on it. The best workmanship has been devoted to these decorations. The illustrations in this valuable and interesting work are interspersed with descriptive letterpress. The whole work is in the quarto form.

VARIORUM.

In "A Plan for the better Management of Railroads," by Mr. F. Chaplin, published by Effingham Wilson, of the Royal Exchange, London, some wholesome advice is offered to railway directors on the true nature of their *premises*, as simply those of great carriers and trading companies. The author, however, is of opinion that railways will never *pay*, nor will they ever be fairly tried, till they come under the management of "men who, at least in their corporate capacity, have nothing else to do."——A third edition of Quested's "Art of Land Surveying, explained by short and easy Rules, particularly adapted for the use of Schools, and so arranged as to be also useful to Farmers, Stewards, and Others," has been issued by Relfe, Brothers, of 150, Aldersgate-street, London. As before noted, this is a good little book of its kind.——A sixpenny pamphlet has been published by Johnson, of St. Martin's-lane, Charing-cross, the title of which will sufficiently explain its objects. It is titled, "A few Lines to Railway Companies and the Public, suggesting a Plan for the better Management of Railway Trains, and on the Means of communicating between Guards and Engine-drivers for the prevention of Accidents, containing a Description of a new Air-whistle, and of a simple Plan to indicate to Engine-drivers the accidental Separation of a Portion of a Train, carrying out a Suggestion in Captain Galton's Report on Railway Accidents, 1855." Flags and whistles have been over and over again suggested for the purposes indicated.——Messrs. Longman and Co. have issued a shilling pamphlet, giving a description of "the Globotype Telegraph, a recording instrument, by which small coloured balls are released, one by one, and made to pass over a series of inclined planes by the force of their own gravity." The inventor is Mr. D. M'Callum, of Stonehouse, Devon. He purposes the substitution of these recording balls for the needle which does not record, and states that the working of his instrument can be learned by a boy in half a minute, that the glass balls are practically everlasting, that no paper and pencils are requisite, no uncertain movements of needles to be watched, and no clock-work to be wound up, for recording messages, and yet that they *are* recorded in visible, tangible characters, which any one may read.——"The Half-holiday Question considered, with some Thoughts on the Instructive and Healthful Recreations of the Industrial Classes," is the title of a sixpenny pamphlet by Mr. John Lilwall, the honorary secretary of the Early Closing Association (Kent, Paternoster-row, and others) in which the author offers various suggestions with reference to the very desirable object of converting Saturday into a half-holiday, or rather of restoring it as such, for in former days the Saturday afternoon was a very general half-holiday both with young and old, as it ought still to be. Gymnastics, concerts, and various other recreations are among the holiday pastimes suggested, not for behoof of the poorer orders of work-people alone, but of employers as well as employed, and, indeed, of the great body of the industrial classes.

Miscellanea.

Gun-wadding for the Stage.—We have had various communications on this subject since our last, but the subject is not one for *us* to enlarge much farther on. There are two of these communications, however, to which we must allude. Mr. T. E. Dunn suggests wads cut from woven or compressed Asbestos, and remarks of very thin metallic gun-wadding, that it would be liable to melt, and adhere to the interior of the barrel. Mr. Wentworth L. Scott informs us that he finds by experiment that thin metallic gun-wadding not only melts, but is even apt to ignite combustible matter, such as touch-paper, when fired, and that he has prepared two kinds of wadding, one which will not easily take fire, and the other so highly combustible that it is entirely consumed in its passage along the gun-barrel. The latter of these he has found to be the most effectual. The idea is both an original and a good one. Continued practice, our correspondent says, has showed the impossibility of igniting a combustible target even at 5 feet with this wadding.

Californian Trees.—A gentleman travelling in California and adjacent parts, sends an account to an American paper of an extraordinary grove of trees, growing at an elevation of 4,500 feet above the level of the sea. This Mammoth Tree Grove, as it is called, contains in its valley eighty-five monster trees, in an area of fifty acres. On the body of the "Big Tree" there is a house 14 feet by 80 feet, which contains two fine alley bowling-alleys. The stump of the tree is intended for a ball room! I measured the stump myself at a distance of 8 feet from the ground, and found it to be 26 feet in diameter at the narrowest place. This tree is not the largest tree in the grove, but it is the largest perfect one. It is 95 feet in circumference, and measured, after it was cut down, 300 feet in length, the stump standing 8 feet high. It is estimated by the grains of the stump to be 3,000 years old. Five men were occupied twenty-five days in felling it (which was done by boring), and three weeks to strip off its bark to the height of 52 feet. The "Miner's Cabin" is 80 feet in circumference, and nearly 300 feet high: it is open in front about 17 feet. The "Husband and Wife" are about 250 feet high, and each 60 feet in circumference. They seem very affectionate, leaning toward each other at the top. The "Family Group" consists of twenty-six trees, the father, mother, and twenty-four children. The father, from appearance, was blown down many years ago. This tree measures 110 feet in circumference, and the supposed height while standing was 450 feet: the remaining length where it was broken off by falling against another tree, is 300 feet. It is hollow the entire length, and large enough to ride into on horseback! The "Hercules" is 350 feet high and 107 feet in circumference: this is the largest standing tree in the grove, and would make 725,000 feet of lumber. It, like many other large trees is imperfect, being burned on one side 8 feet. The "Horseback Ride" is an old fallen hollow trunk of 250 feet in length: it is separated into two parts. The space ridden through is 75 feet in length, and 12 feet diameter in the clear. It is the intention of the proprietors of this grove to make it one of the most agreeable summer resorts to be found in the State, and from the manner in which they have commenced, adds the traveller, I have no doubt that all who visit the place will find their words true. A specimen of these mammoth trees is now in London, at the Philharmonic Rooms, Regent-street.

The Nicholson Memorial at Carlisle.—The first practical step towards the completion of the monument intended to be erected to the memory of the late Mr. Peter Nicholson, was taken on Monday before last, when the foundation-stone was laid at the Cemetery, in presence of the committee appointed by the subscribers to carry out the details of the work, and of other friends and admirers of the late Mr. Nicholson. The site selected is nearly mid-way between the two new chapels, and is one of the most elevated portions of the cemetery. The monument itself is to be a triangular column of 35 feet in height, built of freestone, with ornamental mouldings; one side of the base representing a joiner's square, a compass, and a plummet line—symbolical emblems of the profession of the deceased. It is from a design by Mr. Billings, and is in course of erection by Mr. Carruthers, of Carlisle, marble-mason. The ceremony of laying the stone was performed by Mr. Robert Cowen, chairman of the committee, who afterwards gave an outline of the career of the late Mr. Nicholson, reported at length, with other proceedings, in the *Carlisle Journal* of last week.

Assyrian Antiquities.—A whole ship's cargo of Assyrian sculpture has just been received at the British Museum, and will shortly be exhibited. This sculpture is of somewhat later date than that already in England, and shows a decided advance in art. Some animals are very beautifully represented, and there are some new and graceful examples of ornamentation. The archæologist will be surprised to see some well-defined, lancet-shaped arches, and other architectural details of interest.

The Museum of Science and Art at Brompton.—The iron structure now in course of erection on the land of the Royal Commissioners, between the Kensington-road and Old Brompton-road, is beginning to make a show. We reserve particulars until it is a little more advanced.

Camberwell New Cemetery.—The contractor denies the imputation sought to be fixed by the correspondent whose statement we refused to insert last week; and refers to the architect to the cemetery, under whose certificates of conformity to the contract the various sums of money have been paid to him.

The Painters' Strike in Glasgow.—This strike is at an end—a compromise having been effected. The men relaxed in their demands, and the masters consented to a certain advance in the rate of wages.

Sir Charles Eastlake and the Paul Veronese.—On the vote of 17,639*l.* being moved for the expenses of the National Gallery, various members of the Commons proceeded to abuse Sir Charles Eastlake and Mr. Otto Mündler in strong set terms for purchasing, or at least paying so much for, "The Adoration of the Magi," by Paul Veronese; and a formidable array of newspapers, journals, magazines, and reviews, were quoted or referred to in support of the view taken. Several communications were forwarded to ourselves, but we refrained from printing them, because we really have some confidence in Sir Charles Eastlake, and would not set our own opinions as to the soundness of such communications in competition with his, at all events considering the implied object of displacing him from his office. An amendment that the vote be reduced by 650*l.* the item for travelling expenses, was rejected by a majority of 152 to 72, and the vote then agreed to.

The Clapham Athenæum.—On the 27th ult. Mr. James Hopgood, as vice-president of this thriving institution, received the members and many friends at his residence, Clapham-common, where he had gathered together numerous objects of interest for their amusement, and catered hospitably.

Artists' and Amateurs' Conversazione.—The last *conversazione* will be held on Thursday, the 17th instant, at Willis's rooms, St. James's, when a good exhibition of works is expected. The preceding meetings have been very interesting.

The Public Education Department.—This establishment has been revised recently, but the increase is only apparent. Additional clerks have been added to the staff in lieu of clerks hired from Messrs. Vachers. The London establishment now consists of a secretary with a salary of 1,200*l.*; two assistant secretaries, 1,800*l.*; eight examiners, aggregate salaries, 2,605*l.*; five clerks, aggregate salaries, 923*l.*; thirty-four assistant clerks, at salaries from 80*l.* to 250*l.*; an advising counsel, 300*l.*; an architect, 400*l.*; forty-one inspectors, at salaries from 200*l.* to 600*l.* and with allowances for personal expenses and cost of travelling.—*Civil Service Gazette.*

St. Martin's-in-the-Fields Reading-room for the Working Classes.—On the evening of the 8th instant Viscount Ingestre gave a lecture on "Travels in the United States, Cuba, and Mexico," which his lordship had visited in 1853. The lecture was calculated to afford much instruction to its hearers, and from the pleasant tone and manner in which it was delivered, much amusement also. At the conclusion a vote of thanks was proposed by a working man, and duly acknowledged by the lecturer, who expressed his warm interest in the success of such institutions as that which he had that night attended.

The Regent-circus.—A correspondent suggests that "Regent-circus North," in Oxford-street, should be called "Oxford-circus." Some alteration is certainly very desirable.

Annual Votes for Public Works, &c.—In committee of supply the following amongst other sums have been voted:—For palaces, parks, and public buildings, 195,000*l.* For the general management of the department of science and art and the schools in connection with the geological department, 64,635*l.* For the Board of Public Works, 22,500*l.* Towards expenses of New Houses of Parliament, 83,680*l.* Towards cost of harbour of refuge at Holyhead, 207,305*l.* (a further sum of 265,000*l.* required), Towards harbours of refuge generally, 233,000*l.* For expenses at Port Patrick harbour, 384,000*l.* Expenses of Department of Public Works in Ireland, 41,221*l.*

THE COPPER TRADE.—The produce of copper ore sales by public ticketing, for the four quarters ending March, 1856, amount to,—Cornwall and Devon, 208,277 tons, realizing 1,293,972*l.* 1s.; Swansea—Foreign and Irish, 49,864 tons, realizing 746,748*l.* 16s. 6d.—Total, 252,641 tons, 2,040,720*l.* 17s. 6d.—a sum considerably beyond that of many preceding years, and accounted for by the unprecedented demand for the metal, and the unusually buoyant market price, which has been kept almost stationary for nearly four years.

GAS.—At the half-yearly meeting of the Lincoln Gas Company, the usual dividend of 10 per cent. was declared, and the progress made in improving the works was said to be satisfactory. —— An advertisement of the United Bristol Company announces a reduction in the price of gas to 4s. per 1,000 cubic feet—to take effect from the 1st of January last.—— At the third general annual meeting of the shareholders of the Southwell Gas Light and Coke Company, a dividend of five per cent. (free from income tax) was declared.

THE CAMBRIDGE LUNATIC ASYLUM.—At the Cambridge Sessions the other day, the Committee of Visitors reported that the tenders for the erection of the proposed lunatic asylum, including lodge and farm buildings, were as follow:—Mr. Wm. Higgs, Westminster, 44,082*l.*; Mr. Wm. Hill, Whitechapel, 40,491*l.*; Messrs. Marriot and Taylor, Coventry, 39,975*l.*; Messrs. C. C. and A. Dennett, Nottingham, 39,530*l.*; Mr. Wm. Webster, Wyberton, Boston, 34,619*l.* The tender of Mr. Webster was accepted by the committee for the sum of 34,619*l.* which was to include every expense; but at a subsequent meeting of the committee it was satisfactorily explained that certain items had been omitted from his tender to the amount of 2,699*l.* and the committee, considering that, with the addition of the above sum, Mr. Webster's tender would still be the lowest, and also be within the estimate, deemed it advisable to add such sum of 2,699*l.* to the original tender, thereby increasing it to the sum of 37,318*l.* The committee reported the result of proceedings taken by Messrs. Kendall and Co. already referred to in our pages. In order to prevent further proceedings, the committee directed the clerk to pay the amount of the judgment and plaintiffs' costs, and the same, which amounted to 1,029*l.* 14s. had been paid. It was further reported that Mr. Percy, the surveyor who took out the quantities under Messrs. Kendall and Co.'s plan, had offered to take the sum of 450*l.* in full discharge of his claim; and the visitors, in order to prevent litigation, had directed that sum to be paid. It appeared that the law-suit had cost them 2,400*l.*!

ANCIENT REMAINS IN THE CRIMEA.—On Thursday evening week Lieutenant-colonel Munro delivered a lecture at the Bristol Philosophical Institution on the subject of the remains of an ancient building, supposed to be a temple, discovered near the British head-quarters in the Crimea. It was an oblong walled enclosure, measuring 150 feet by 93 feet, and it had at one end a circular form. Its walls, which were 10 feet in thickness, comprised a cyclopean wall and an inner wrought wall. After some days they found a well, having on its walls traces of some painting, which was not sufficiently perfect to be made out. They then came to a stone having grooves in it, as if for a liquid to run off, and which he felt satisfied had been a sacrificial stone. They also found sixteen vessels, all having different capitals, and in all of which were different descriptions of soil, a few bones, and some charcoal. The gallant colonel then proceeded to discuss the probable date of the temple, which he himself believed might have been dedicated to Diana, and whose date he ascribed, from the coins and other evidences, to from 350 to 450 B.C. He exhibited grotesque fragments of incense vessels, iron remains of spear tops, and other matters, and also an exceedingly graceful Grecian female head in terra cotta, which Mr. Hawkins, of the British Museum, and others who had seen it, had pronounced to be one of the most beautiful specimens of ancient Grecian art in Europe, if not in the world.

LEITH DRAINAGE: ARCHÆOLOGICAL DISCOVERY. —The drainage contractor, in "Timber Bush," last week, came on a strong piece of masonry, conjectured to be part of the old fortified wall of Leith. It is 18 feet thick. On cutting it through there has been discovered a passage running along, near the centre of the wall, 2 feet 10 inches broad, and 6 feet 2 inches in depth. Should this passage continue along the whole of the old wall—which runs in a direction from Assembly-street to about the Bush Entry—and be found entire, it may be used for drainage, saving several hundred pounds.

ART IN MANCHESTER.—A proposal is before the public in Manchester for a grand International Exhibition of pictures, sculptures, glass, engravings, and other works of art. The scheme includes the erection of a Crystal Palace and a world-wide agency. The means proposed are a large guarantee fund.

THE PLYMOUTH ROYAL HOTEL AND ITS ARCHITECT.—At a recent dinner in the Royal Hotel, the Mayor, Mr. Kelly, who presided, in one of the speeches which he made on the occasion, as an illustration of the contracted views of the corporation of the days when the Royal Hotel was built, referred to a story current to the effect that some gentlemen connected with that corporation, in returning from a social party one evening, had removed the stakes which had been placed to mark out the line of building on the George's-place side some distance backwards, and that to that circumstance was due the width of the space between the porticoes of the hotel and George's-place! This was reported in the newspapers, and so came under the notice of Mrs. Foulston, the widow of the late Mr. John Foulston, the architect by whom the hotel and theatre, and many other public buildings in that neighbourhood, were designed. Mrs. Foulston, regarding the absurd story as detrimental to her husband's reputation for taste and judgment, has published a letter denying its truth. Mrs. Foulston farther writes:—"The weight of iron in that theatre is immense. It was so constructed as to render it secure from fire; and how necessary such a precaution is in building theatres, the events of the last fifty years fully prove; during which period almost every theatre in London, and many in the country, have been burnt down once, if not twice, and what a large sum of money it has saved the corporation in insurance, and for which Mr. Foulston never received thanks in his lifetime, or a monument afterwards, though he has certainly been a real benefactor to Plymouth. I feel assured that the few who are now living, and who can remember Plymouth forty-five years ago, will readily admit that the town is much indebted to the refined and architectural taste of my lamented husband."

NOTES AND QUERIES.—1. What would be the expense of fitting up a slate bath in all dwelling and lodging-houses? 2. Why are our barracks without baths and washhouses? and of (what is of far more importance) a gymnastic ground, like the one at the Cadet's College, at Woolwich.—N.B. The French showed themselves more agile and nimble in the Crimea than our soldiers, owing, no doubt, to the early, constant, and steady training of gymnastics in that country.—J. B. N.

COMMERCIAL VALUE OF GAS REFUSE. — The "Journal of Gas Lighting" says,—Nothing, perhaps, is more remarkable in the history of gas lighting than the amazingly small advantage which this art has hitherto derived from the resources of practical chemistry. In the application of mechanics, and in the expositions of science, there have been, indeed, no lack of inventors and instructors; but, nevertheless, if we look anywhere in our gas establishments for the methodical employment of that routine of operations by which, in the chemical arts, a profit is drawn from mere waste refuse, we shall look in vain. In this respect, matters remain as they were in the earlier eras of Murdoch, Watt, Clegg, and Lowe: then, as now, the only saleable products from a gas-work consisted of coke, gas, tar, and liquor. We will not enter into an analysis of the circumstances which may have retarded the development of this particular industry, though, no doubt, much of it has been due to the benumbing agency of what are called "patents," but which ought, in reality, to be called "pretensions." It is enough, however, that at the present moment there is nothing either of the one or the other kind which stands in the way of a gas company sincerely desirous of carrying the manufacture of gas out to that economical point at which the greatest amount of profit is obtained at the least cost. If we admit a large outlay for labour, wear and tear, investment of capital, &c. there is, nevertheless, an obvious and certain source of profit, sufficient to make a perceptible difference in the dividend of our metropolitan companies, and fully justify us in the assertion, that practical chemistry has not yet fulfilled its task towards this important branch of industry.

ARCHITECTURAL MUSEUM.—The prizes for carving were presented on Monday last, but we must postpone notice of the meeting.

MAJOLICA WARE.—This ware is named from the fact that painted pottery first came into Italy through the expedition against Majorca, in the twelfth century, when Moorish pottery formed part of the spoils. What we now know as Majolica ware proper belongs mainly to the fifteenth and sixteenth centuries. The earlier specimens of it are called Mezza-Majolica. Majolica is sometimes termed Raffaelle ware, but improperly so: Raffaelle may have painted some of these pieces with his own hands, and his compositions are found upon many of them; still, the best works in this manufacture were not produced till after the death of Raffaelle. The Bernal Collection, dispersed in 1855, contained about 400 pieces of Majolica ware, which cost Mr. Bernal less than 1,000*l.* but realised at the sale 7,000*l.*—*From Timbs's "Things not generally known."*

THE CUSTOM-HOUSE, LONDON.—With reference to the Custom-house, was it not proved at the trial, that piles were charged as 30 feet long, only entering the ground 8 feet? Was it not proved that even then the *piers* were not built *over* these piles? I would not speak ill of the dead, but if the truth for that sake is to be avoided, how can we obtain history? Scarlet (Lord Abinger) was concerned in the Custom-house trial: see what he said in Lord Byron's trial on "The Vision of Judgment!"—A. B.

FATAL FALL OF A FLOOR AT CORK.—Last week, at a "wake" in "Penrose-square,"—a kind of court or lane off Duncan-street, in the "Marsh," at least fifty persons, assembled in one room of a miserable dwelling, were precipitated, by the fall of the floor, not only to the story beneath, but through that also, to the ground-floor, carrying the second-floor with its occupants along with it, and burying also those of the ground-floor beneath both of those above. In course of the next two hours eighteen killed and sixteen wounded were dragged out.

TENDERS

For two houses on the Brockley-hill Park-estate. Messrs. Morgan and Phipson, architects. The quantities supplied by Mr. Morris Evans:—

Foster	£2,463 0 0
Barrett	2,177 0 0
Day and Co.	1,950 0 0
Rolfe	1,792 0 0
Robinson	1,789 0 0
Todd	1,748 0 0
Simmonds	1,498 10 0
Cowley	1,354 0 0

For alterations and additions to a House in Grosvenor-place. Mr. E. I'Anson, architect:—

Lucas, Brothers	£2,870 0 0
Holland and Son	2,799 0 0
W. Cubitt	2,624 0 0
Mackenzie	2,373 0 0
Watts and Son	2,156 0 0

For an addition to a house and stable, for Mr. J. Store, Enfield. Mr. J. Gould, architect:—

Hill (London)	£1,080 0 0
Wood (ditto)	1,069 0 0
Goffe (Cheshunt)	1,024 0 0
Cushing (Enfield)	992 0 0
Patman and Co. (ditto)	957 0 0

For the erection of three houses in Westminster. Mr. James Howell, architect:—

	For Two Houses in Vincent-square.	One House in Fynnes-street.	Total.
Mackenzie	£1,319 0	£537 0	£1,856 0
King and Son	1,270 0	525 0	1,795 0
Wilkinson	1,235 0	547 0	1,782 0
Smith	1,185 0	572 0	1,757 0
Pink	1,179 0	489 0	1,668 0
Baker and Wardell	1,150 0	480 0	1,630 0
Edser	1,100 0	487 10	1,587 10

For additional warehouses for Messrs. Bousfield, 126, Houndsditch. Mr. James Harrison, architect. The quantities prepared by Mr. W. J. Gardiner:—

	For Building.	If Brickwork in Cement.	Total.
Pipers	£2,149	£76	£2,225
Brass	2,038	74	2,112
R. Lawrence	1,970	59	2,029
Browne	1,857	85	1,942

TO CORRESPONDENTS.

"*Whitewash.*"—"W. W. S." says:—I am about to get rid of the whitewash off the mullions, arches, &c. in an old church. Is there any speedier or better method of doing so than scraping? Is there no chemical fluid that would act upon the whitewash without injuring the stone?

"*Bats.*"—"A Churchwarden" desires to know "the best manner to clear out a host of bats, which have for some years past settled in the roof of a church," and produce much annoyance.

"The New Fibrous Material" (we cannot answer any further inquiries on this matter. The patentees must take their own course to make their locality known)—"F. D."—"J. D. P."—"T. H. H." (we are forced to postpone)—"Palmam qui meruit ferat"—"Philanthropist"—"D. H."—"H. C."—"A. J. H"—"H. L."—"J. H. T."—"N. G."—"C. C. N."—"G. R. C."—"F. E. and Co."—"J. A."—"R. R."—"I hate a Man who Grumbles"—"G. I. T."—"No. 3"—"Old Soldier"—"J. G" (under our limit)—"S. W." (ditto)—"One of the Competitors" (ditto)—"Potter" (arrangement has already been alluded to)—"Straightforward"—"C. F. H."—"J. B." Oswestry (will find his name in our last number)—"J. H."—"Mr. P."—"W. F."—"F. C. P."—"W. T."—"J. W. F."—"G. H."—"Philo-Scientiæ"—"J. L." Lille (let us hear from you)—"Mr. H."—"A Surveyor"—"Constant Reader" (the term mineral applies to any inorganic substance found in the earth)—"G. M."—"L. and M."—"Old Architect"—"F. W. P."—"B S. B." (thanks)—"Mr. C." (thanks)—"G. C." (we have nothing to do with the work in question)—"J. B."—"F. W. S."—"S. S."—"Verax"—"Verbum sat"—"C. C. C."—"Fairplay"—"W. C. T."—"W. D." (does not solve the difficulty)—"J. G. B."—"E. B. D."—"Messrs. M. and P."—"J. A." (thanks)—"Bells" (several articles are unavoidably postponed).

NOTICE.

FROM and after the 1st January, 1856, the *entire postage* upon all newspapers sent to France, and Foreign countries *vid* France, must be prepaid: the stamped copy of the paper is of no avail.